KPMG

The rising social and economic cost of major depression: seeing the full spectrum

A bespoke white paper
for Asia-Pacific Leaders

Issued for World Mental Health Day (December 2020)

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Foreword

Major depression is a spectrum

Lack of energy. Sleep deprivation. Thoughts of poor self-worth, even suicide. The pandemic has been a difficult time for many and the need to focus on our collective well-being has never been higher. Now, is the time to pave the way to a brighter future through better mental healthcare.

Major Depressive Disorder (MDD), a long-standing health challenge, contributes to over one million lives lost each year. Until now, MDD has been seen as a "homogeneous disorder"; however, the prominence of certain core symptoms, which vary at an individual level, leads us to change our current approach. We need to meet the rising challenge by organizing and prioritizing our efforts to better diagnose and effectively treat MDD, specifically as a "spectrum of sub-types" addressing the inherent heterogeneity.

More than 90% of people with MDD in the Asia-Pacific do not seek help. Lingering stigmas, poor access to accurate diagnoses and effective therapies, and patient pathways in need of greater support are remaining barriers to achieving the desired progress. We are seeing a disturbing rise in the incidence of suicidal thoughts with intent to self-harm among people living with chronic Major Depression as well as those who have stopped responding to available anti-depressant medication, thereby becoming "treatment-resistant".

As a result, the adverse impacts are far-reaching. Major Depression is among the leading causes of disability in the Asia-Pacific. 70% of those with Treatment-Resistant Depression (TRD) are unemployed. Suicide is a leading killer of young adults, exceeding homicide and war.

In preparing our research, we set out to hear from stakeholders directly by speaking to patients, practitioners, and policymakers across the region. This publication summarizes their voices, and the suggested path forward. We recognize the tremendous efforts that have been made. Mental health policies are already in place in most of the Asia-Pacific, with a level of financial protection for those who seek help. The increased reported prevalence of Depression is a sign of reduced stigma and its improved recognition as a clinical diagnosis.

But we still have some way to go. Breaking down Major Depression into sub-types for appropriate management, for example in areas like MDD with suicide ideation and TRD, are goals for us to achieve in the near-term. Similarly, support is urgently needed for caregivers of people living with Depression, including family members, employers, and others in the community, in order to prevent the burden of care from causing further mental ill-health.

We need innovative new treatment options to target the multiple core symptoms of Depression, where the current therapeutics have shown to be less effective over time. Similarly, targeting and improving effectiveness of mental health investments will be key.

We hope this white paper sheds light on the rising cost of Major Depression, as well as the associated social and economic implications, for Asia-Pacific leaders. Most importantly, we call for policies that can bring the best practices to life for Major Depression understanding and response, at a level of detail that helps target the disease sub-types which disproportionately impact health and well-being at large. We look forward to discussing these results together, and to giving those impacted by MDD the more targeted support they deserve.

Professor Jayashri Kulkarni
Director, Monash Alfred Psychiatry Research Centre

About the white paper and its call-to-action

The impetus for our research stems from the rising prevalence and cost of Major Depressive Disorder (MDD) in the Asia-Pacific. This is despite the heightened awareness of mental health and increase in Depression policies. So we ask the question - what's wrong with this picture? While awareness and resource allocation levels have improved, we are still fighting a losing battle against Depression. Our approach needs a refresh. This, in our view, starts with how we look at the disease itself. Recognizing that Depression is not a "homogeneous disorder" but a collection of symptoms, and that these symptoms vary at an individual level, will be a promising start. Similarly, those suffering, and their support networks, need a more targeted strategy featuring appropriate care and therapies in order to change the current state of Depression in the region.

After conducting an extensive literature review in the Asia-Pacific and beyond, we set out to hear from the policymakers, healthcare practitioners, and even patients themselves about their challenges as well as proven resolutions for a more supported MDD future. Interviews were conducted across Australia, China Mainland, Hong Kong SAR, Japan, Korea, and Taiwan. We then coalesced the policy framework recommendations into common themes for the Asia-Pacific, including localized snapshots to drive tactical action forward. KPMG in Singapore led the research and writing activities with appreciative contributions from multi-stakeholder inputs (listed on page 34). Sponsorship was provided by Johnson & Johnson Pte. Ltd.

Asia-Pacific leaders have a window of opportunity to enable change

This white paper helps to illustrate the limitations in the current approach to Major Depression, including the need to break the disease into sub-types for better targeting and resolution, and to address variability in core symptoms at an individual level. A one-size, fits-all model isn't working. The rising burden of Depression and the disproportionately high costs of certain sub-types of MDD (such as MDD with suicide ideation and Treatment-Resistant Depression (TRD)) will put a further strain on healthcare systems in the Asia-Pacific. An excerpt of the key policy considerations, outlined further in each section of the paper, are as follows:

- MDD has the largest disability burden among mental illnesses, and second largest overall [4]
- While awareness of Depression has improved, understanding and attitudes remain poor
- MDD is like a "spectrum" of sub-types, requiring targeted and individualized treatments
- Healthcare resource allocation in Asia-Pacific is varied, hence an opportunity to maximize investments by improving the efficiency and effectiveness of Depression patient pathways

Unlocking Depression Spectrum Support in the Asia-Pacific

The policy levers can therefore be represented at a high level here, with a more detailed checklist as well as localized action plans provided in the paper itself. We hope this paper progresses dialogue on deeper Depression understanding and policy reaction, involving a multi-stakeholder approach to enable the change:

Policy recommendations for localized implementation

Enforce healthcare standards to improve Depression education

- Drive conversations through youth channels, influencers
- Require employers to conduct training and support
- Establish nation-wide platforms to scale the above

Provide sustainable coverage for proper diagnosis & treatment

- Ensure healthcare planning cycles recognize and place an emphasis on MDD as a spectrum
- Help families and caregivers too, as a key support network

Deploy new models of care that are more effective and efficient

- Reorganize care and treatment pathways that are patient-centric
- Take an evidence-based approach to new interventions
- Empower the use of digital tools for the Depression care system

Asia-Pacific perspectives: Consistent challenges

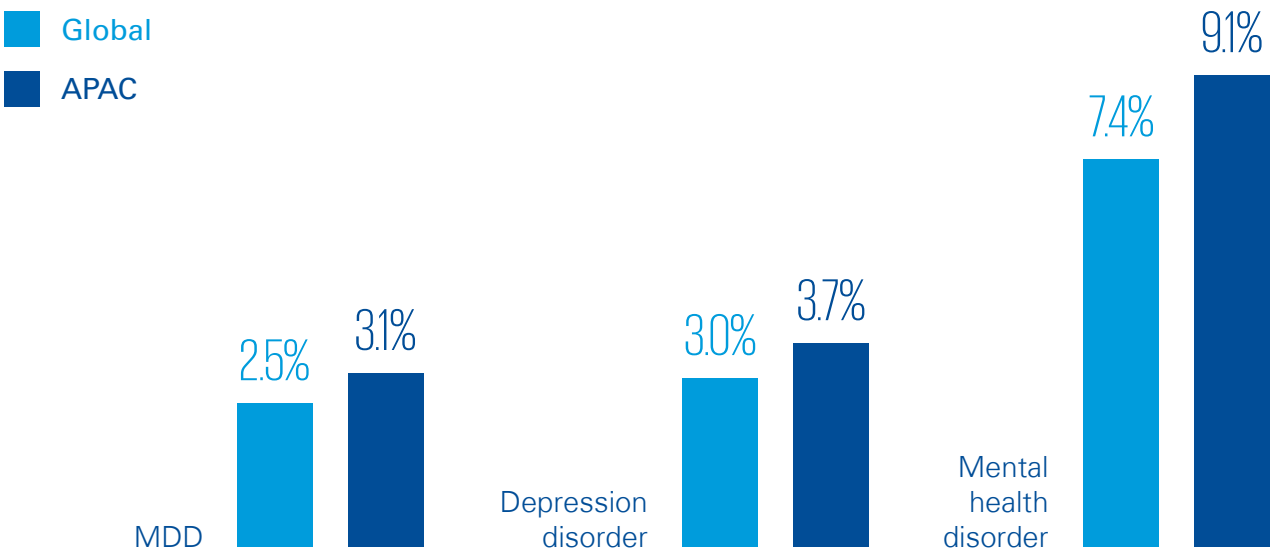
Depression affects 350 million people around the world and claims more than one million lives each year by suicide [1], making the disease a leading cause of disability.

The burden of MDD in the Asia-Pacific is about 3.1% [2] of total, higher than the global average and still under-represented due to sampling and reporting issues. The social and economic implications are staggering, yet efforts to combat the rising tide of Major Depression are proving unsuccessful – there remain lingering stigmas that make those with Depression wary of seeking help, ineffective diagnosis and treatment techniques, and patient pathways that are difficult to navigate.

The criteria for MDD is characterized by having at least five of the nine depressive symptoms (see diagram below) that last for longer than two weeks, usually at increasing levels of severity. Current interventions to treat or manage MDD range from psychological (e.g. Cognitive Behavioral Therapy, CBT), to medical and pharmacological (e.g. antidepressant drugs like Selective Serotonin Reuptake Inhibitors, SSRIs), to lifestyle changes (e.g. diet and exercise), the lot of which are often deployed in combination. The more extreme cases with few remaining options may resort to Electro Convulsive Therapy (ECT).

Global vs APAC comparator

As a % of total burden of disease [123]



Yet clearly, a new approach is needed. MDD remains the single largest disease burden in the mental illness category at nearly 35% of Disability-Adjusted Life Years (DALYs), and is projected to become the #2 overall health burden after heart disease [4]. For someone with MDD currently, their life expectancy is 20 years shorter than the average person [4]. A full 16 million DALYs are attributed to MDD-induced suicides, or one suicide every 40 seconds in the world [4].

The disability-adjusted life year (DALY) is a measure of overall disease burden, expressed as the number of years lost due to ill-health, disability or early death.

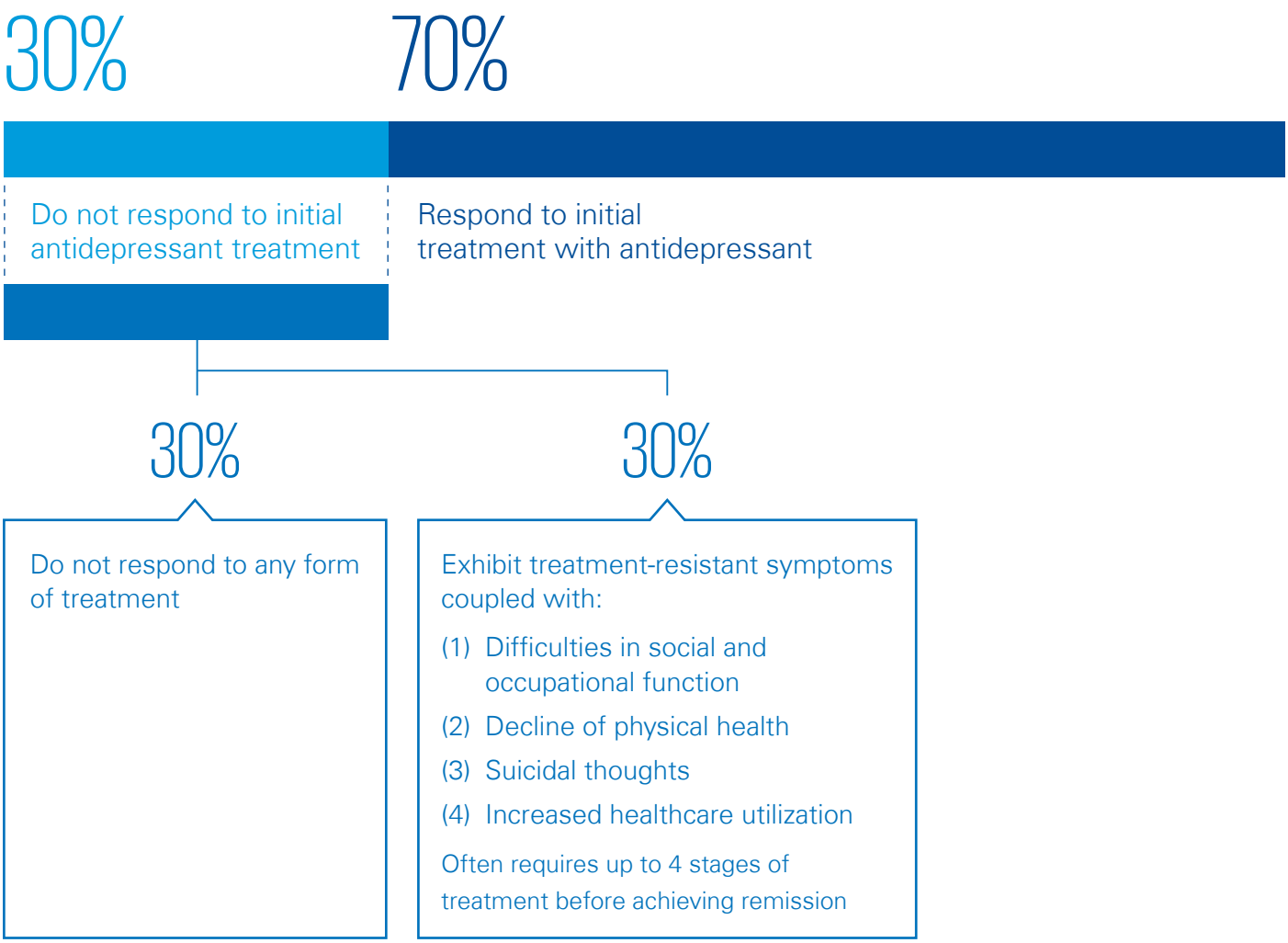
> "Most of our callers have had severe Depression for a lifetime. We don't choose the patients, they choose us. And they can end the call (and their life) at any point."
>
> said a suicide hotline representative from The Samaritans in Hong Kong SAR.

Important for this paper, and for Asia-Pacific leaders going forward, is to recognize that Major Depression is not a "homogeneous disorder". Rather, MDD comprises up to nine core symptoms, with varying levels of severity. The symptomatology and severity also vary at an individual level. Such variations make it hard to diagnose and effectively manage Major Depression, leading to inadequate response to treatments and frequent relapses.

Multiple relapses are further compounded by the diminishing treatment response over time.

TRD is one such sub-type of MDD that is a well-recognized yet hard-to-treat condition. People with TRD often suffer in silence for years as the current treatment interventions do not provide relief. One-third of MDD patients ultimately become treatment-resistant after a while.

Of those receiving treatment [5]



TRD is potentially a life-threatening condition. Often people who are treatment-resistant have higher rates of relapse. The healthcare practitioner community informed us that 40% of patients tend to relapse after the first round of medication, and an alarming 90% relapse after the second treatment in what is later determined to be those expressing TRD symptoms. These treatment-resistant patients remain depressed for long stretches of time and, in their state of hopelessness, are more likely to have self-harm ideation - 30% of people with TRD will attempt suicide at least once in their lifetime [120]. Beyond DALYs, the chronicity and lack of treatment options have broader impact - the unemployment rate of people with TRD is nearly 70%, directly affecting their socioeconomic status and that of their families.

> "Depression remission is dependent on a variety of medical and social factors. But once a person becomes treatment-resistant, many aspects of their life are destroyed, and it can be really difficult to come back from that."
>
> said Professor Jayashri Kulkarni, Director of the Monash Alfred Psychiatry Research Centre in Australia.

Major Depressive Disorder (MDD)

is a psychiatric disorder characterized by a "**depressed mood**, with a markedly diminished interest or pleasure in all activities that must **persist for at least two weeks**".[1] [124]

An episode of MDD is most frequently treated with oral antidepressants (AD)

VS

Treatment-Resistant Depression (TRD)

is a **subgroup** of **MDD**, defined by an Asia-Pacific consensus group:

An **MDD** episode that **does not respond** to at least **two AD treatments** of adequate dose and duration.[2] [125]

Indicator	Non-TRD MDD	TRD
Attempted suicide	8% [8]	30% [9]
Psychiatric comorbidities [10]	17%	26%
General anxiety [11]	27%	53%
Requires hospitalization [12]	19%	50%
Days of hospitalization [12]	29	63
Episode duration (months) [13]	3	59
Daily activity impairment [14]	31%	54%
Absenteeism [14]	10%	20%
Productivity impairment [14]	25%	53%

While the observed burden of the TRD indicators is about **2x** that of non-TRD MDD, the associated healthcare costs are actually **5x higher** [15]

And TRD is only one such example of a Major Depression sub-type – there are other sub-types too, with similar and even more devastating impact to individuals, societies, and economies.

There is growing consensus among the practitioner community is that the sub-types exist, and that Major Depression is more of a "spectrum" than a homogeneous disease entity. However, current policies and treatments are not targeted enough to address the sub-types nor the specific individual-level variations. There remains huge unmet need for a change in approach.

> "We must understand the difference between good mental health and mental ill-health, People move up and down the spectrum. The growing awareness of the topic is positive, now we need to get a layer deeper."
>
> said Dr. Zoe Fortune,
> CEO of City Mental Health Alliance Hong Kong.

Key policy considerations:

1 Largest disability burden

Major Depressive Disorder (MDD) has the largest disability burden in the mental illness category, and is second only to heart disease in terms of overall health burden [4].

2 Understanding of sub-types

MDD is like a "spectrum", comprising of sub-types which can have disproportionately higher cost and burden on individuals, society, and healthcare systems.

3 Treatment options for sub-types

There remains a high unmet need of better treatment options for people languishing in Depression across the Asia-Pacific. Although increased focus and improvements in clinical guidelines to address MDD are recognized, better targeting of the sub-types and the individual variations is the need of the hour.

The challenges ahead of us

One of the key issues facing many healthcare systems in the Asia-Pacific is the chronic under-investment in healthcare as a percentage of GDP versus OECD nations (5% vs 10%) [16]. Such a gap is even more pronounced when it comes to investments into mental healthcare, and more specifically in the area of Depression.

Below is a "league table" of relevant indicators in the Asia-Pacific in order to quickly see how the regions involved in the research of this paper are stacking up. While coverage programs and guidelines have improved through mechanisms such as National Health Insurance (NHI) and strong medical societies, there is noticeable variability in policy and resource allocation as it pertains to Major Depression. Even the burden of MDD is contrasting across markets, although this is more likely due to the issues around disease stigma and reporting.

	Burden[1]	Budget[2]	Coverage[3]	Policy[4]	Guidelines[5]	Access[6]
Australia	8.0%	$400	100%	Yes	Yes	13.5
China Mainland	2.9%	$24	90%	Yes	No	2.2
Hong Kong SAR	3.9%	$316	90%	No	Yes	4.5
Japan	2.3%	$205	70%	Yes	Yes	11.9
Korea	2.3%	$71	70%	No	Yes	5.8
Taiwan	1.8%	$128	100%	No	Yes	7.5

1 MDD as a % of total DALYs (across all disease categories) [17]
2 per-capita annual expenditures for mental health-related services [16]
3 % mental health-related expenditures eligible for government insurance reimbursement [6]
4 government mental health policy with mention of MDD programs [6]
5 use of MDD clinical guidelines that are aligned to international standards [6]
6 number of trained psychiatrists per 100,000 population [18]

Both an increased level of investment as well as more focus is therefore needed for MDD. Depression is not a choice, and it will not go away – people deserve proper care and targeted intervention. A lingering influence across the league table dimensions is the attached attitudes towards Depression that vary region-to-region and with cultural biases playing a part in the ongoing stigmas. Beyond better awareness, the Asia-Pacific requires better understanding through public education of Depression and its consequences. Patient voices need to be amplified, with raised societal recognition of this devastating illness that can ultimately become fatal. Caregivers and families must also share their experiences.

Our interviews show that the wider public often do not view Depression as a "disease" requiring medical intervention. A study comparing regions in the Asia-Pacific found that more than 40% of people in Japan believe Depression is a sign of weakness, not a real "illness" [19]. By comparison, fewer than 15% of people in Australia [19] feel the same way. In Singapore, 9 out of 10 people surveyed indicated that those with Depression could recover on their own if they wanted to [20]. Such perceptions mean that people living with Depression are not treated properly, leading to social isolation, increased risk of suicide, and more extreme forms of the disease like TRD. These attitudes give rise to discrimination against people living with Depression from within their communities too. "Not enough people come forward about their condition, they don't tell their families, much less their doctors," said Dr. Hannah Sugarman, from Mind Hong Kong. In Korea, for example, a planned psychiatric hospital was ultimately not commissioned after residents in the neighborhood objected to having such facilities near them [6].

"Awareness of Depression has increased dramatically," said Dr. Elisabeth Wong, Psychiatry Specialist in Hong Kong SAR, "but this does not equate to understanding. Depression is still seen as a choice, an either/or."

Sadly, a study in Asia-Pacific found that stigma and discrimination were the top two most common factors associated with lack of uptake in mental health support services [21], including the perceived affect to people's own reputation as well as that of their family. Certain populations in Asia-Pacific may see formal acceptance of a Major Depression diagnosis as not being aligned to their cultural norms. Even gender plays a factor, with fewer men seeking help as compared to women [21]. A stigma case-in-point - in Japan, if a person produces a medical certificate, 90% of their expenses are covered by the state; if no certificate is produced, only 70% is covered [6], yet many people decline the certificate in order to avoid being "labeled".

A similar stigma challenge is observed in Taiwan [6], though they have recognized the issue and now allow people to apply for such certificates on their own for access to full state benefits.

The need for a change is apparent - people living with Depression, their families and caregivers, and society as a whole require a more targeted approach. Bearing in mind the sub-par healthcare spend, inconsistencies in regional policies, and the lingering stigmas, we now dig deeper into how such perceptions manifest themselves in the patient pathways, and, within this context, how ineffective diagnosis and treatment have become barriers to progress. In addition, we explain the social and economic implications of these issues for Asia-Pacific leaders.

The attitudes toward Depression in the Asia-Pacific have severe knock-on effects

>90% of people living with MDD in the Asia-Pacific do not seek help, this is among the highest rate in the world [6]

60% of cases fail to achieve relief from Depression after taking medication, often becoming treatment-resistant after a few episodes [121]

Up to 85% of people who live with Depression in low- and middle- income countries (LMICs) receive no treatment at all [22]

For the small minority of people who do seek help, navigating their own healthcare systems can be a challenge. Not knowing where to start, the referral process, coverage and cost, and accessibility to community-based care can be significant hurdles. The lack of clarity does not just affect the Depression patients – their families and even healthcare professionals can be impacted. These factors lead to limited uptake in mental healthcare services as well as inefficiencies in the patient pathways, which fail to utilize the resource commitments that have been put in place for people living with Depression.

In China Mainland for example, despite progress with mental health at a policy level, there remain issues with doctor-patient communications, coordinated care delivery across agencies that affect patient experience perception, and limited understanding about the latest advancements in targeted disease interventions such as for the MDD sub-types [6]. The screening and referral mechanisms are not strong enough - in a survey conducted, only one in ten patients in China Mainland were made aware of their Depression diagnoses [23]. In Korea, Depression is not classified as a biological disorder, but rather a symptom of stress. While alcohol abuse (and treatment) in Korea are commonplace, Major Depression does not get the same level of attention - in fact, limited thought is given to the interrelationship of both conditions [6]. In Hong Kong SAR, waiting time for Depression treatment can stretch to two years upon being diagnosed [6].

Primary care, often seen as the bedrock for strong health systems, is a cornerstone of mental illness triage. It is estimated that two-thirds of the general population who first seek help for mental disorders do so with their primary care physicians or providers, where average per-visit consultation time is three minutes [24]. In Australia, for example, mental illnesses constitute 65% of all primary care cases, a figure that is growing year-on-year [24]. Primary care providers in Australia are the sole point of contact for more than 50% of people living with a mental disorder [24], including Depression. In Korea, on the other hand, there are few physicians in the primary care sector trained to handle mental health issues [6]. Hence, poor understanding or attitudes at even the initial stages of the care pathway can have a traumatic ripple effect to a Depression patient's journey.

Location is another contextual factor, especially in the Asia-Pacific. Remote communities tend to also have lower socioeconomic status, and studies have shown that the greater the rate of severe mental illness, the greater the rate of poverty [16]. Yet, in such areas where help is most needed, the support networks for Depression are scarce and understanding of the disease spectrum is lacking. It's not uncommon to see 70+ psychiatrists per 100,000 people in urban settings, while fewer than 2 in the rural parts. Put frankly - the rate of psychiatrists in high-income geographies is 170x that of LMICs [25]. There is high correlation between socioeconomic status, attitudes toward Depression, and the support available. New strategies for bridging the urban versus rural divide are appearing, especially through the use of technology; we will cover such examples later.

> "I lived in rural areas where the public has little knowledge about psychiatry. Even with the symptoms, I didn't realize there is a manifestation that leads to a deepening severity level. If I was aware earlier, I would have reached out for help sooner."
>
> said Patient Zhu from China Mainland.

Antiquated attitudes toward Depression, moreover, influence investment allocations. Currently, 67% of spending for mental healthcare is still directed towards hospitals, and 63% of psychiatric capacity is located within institutional settings [26]. This contrasts sharply with patient pathways and treatment programs in other disease areas, where the push toward next-gen delivery models such as community-based care is seen as a key strategy. Nearly 25% of patients with severe mental illness remain hospitalized for more than one year, contributing to the "institutionalized" perception [26].

Ineffective Depression diagnosis and treatment have become the critical progress barrier

Only 47%
of patients are correctly diagnosed with the right type of Depression [27]

71% of MDD
patients have worsening symptoms due to non-individualized treatment [28]

Nearly half
of people living with Depression experience high costs and limited insurance coverage [29]

Should all the aforementioned obstacles - attitudes, stigmas, patient pathways, resource allocation - be successfully overcome, another major barrier looms: incorrect, under, and missed diagnoses that lead to ineffective treatment programs. The WHO report that too few healthcare professionals receive formalized, ongoing training about Depression symptoms, much less about the latest treatments available [30]. Compare this to cancer, which has more than 60 sub-types approved for clinical coding as well as 135 (and counting) targeted disease therapies already accessible to patients [31].

MDD is an episodic, usually chronic disease consisting of one or more symptoms which can be emotional, cognitive, or physical manifestations. Patients vary in terms of symptoms, disease severity, and disease course. Yet, Major Depression is categorized broadly as a homogeneous disorder with limited differentiation in diagnosis and treatment. Current guidelines and training do not adequately recognize the individual-level variation in the severity of the core symptoms, nor the prominence of certain symptoms over others, in order to tailor treatment and patient care. This over-reliance on "one-size, fits-all" approach calls for a change. It is well-recognized that following an acute, depressive episode, residual symptoms persist in most patients even after recovery is achieved, adversely affecting quality of life for many months post-recovery or leading to a greater lifetime burden of Depression symptoms. For example, anxiety and loss of interest are among the most common residual symptoms; some residual symptoms (anxiety in particular) are strong predictors of Depression recurrence. These residual symptoms also need to be managed effectively to prevent a relapse.

"Inappropriate Depression treatment may be given by doctors in absence of a sufficient understanding of the disease sub-types," said a psychiatrist in Korea. "Prescribing antidepressants without considering the Depression sub-types will prevent patients from receiving optimal care."

In particular through our research, over-prescribing of antidepressant medications, many of which are dated technologies and not targeted, has been flagged as a key issue. Similarly, the indiscriminate use of antidepressant medications in patients who are unlikely to benefit should be reviewed urgently. Most countries are reporting a two-fold increase in antidepressant prescriptions [32]. Such practices can lead to treatment-resistance as well as a sense of helplessness among patients after repeat relapses and therapy failures. Looking ahead, treatments should be tailored to the individuals. Within this context, there is clear and present need for more innovation in proper diagnosis and treatment strategies. More targeted and individualized treatment options are needed to tackle the rising tide of Depression.

Depression is expected to remain largely a symptoms-based diagnosis for the near future. Therefore, training and best practices sharing will help to ensure that clinicians are kept up-to-date and better equipped to support people living with Depression. Equally, current complacency in treatment strategies of Depression needs to be challenged. It is not acceptable that antidepressant medications take 6-8 weeks to show an effect [122]. Newer treatment options that can rapidly target symptoms and pull people out of the "dark chasm" of Depression should be prioritized.

"Honestly, I've never seen a patient with TRD achieve complete remission," said a psychiatrist in Japan. "They end up either committing suicide, getting transferred to a different hospital, or being taken back home by family. There remain large unmet needs amongst Major Depression cohorts."

Failure to appropriately address the underlying Depression core and residual symptoms has consequences.

Suicide is now considered a top killer for young adults globally, the cost of which is equivalent to a full 5% of total healthcare expenditure [33].

The current state of Depression has implications for social and economic outcomes

Depression, and mental illness overall, are among the **highest** out-of-pocket expenditures [34]

Those living with Depression are **40% less** productive than healthy individuals [35]

The Asia-Pacific is **outpacing** other regions in terms of Depression disease prevalence

Major Depression prevalence is among the highest in the Asia-Pacific compared to the rest of the world, and increasingly in the younger population. In other words, future leaders of tomorrow are depressed amid carrying the burden of an ageing population and with already-limited investment going into healthcare systems. Losing this cohort to Depression alone will have a direct ramification on workforce productivity, economic prospects, and society more broadly. China Mainland, for example, has observed DALYs related to mental disorders increase from 7% to 11% [36]; in India, these numbers jumped from 3% to 6% [36]. The burden of such DALYs translates into nearly USD 10 trillion in economic value, of which up to 55% shows inendpoints such as suicide and loss of labor force output [37].

It is not just the people living with Depression who suffer; families and caregivers are affected too. With high out-of-pocket expenditures for mental healthcare and the even greater burden coming from the years of life lost, there is a significant residual impact to those who are supporting the patients. The situation is worse when it comes to certain hard-to-treat conditions such as TRD. Studies show that 92% of TRD caregivers feel stigmatized, and 34% report developing psychiatric conditions themselves [38]. In our review of healthcare policies for regions in the Asia-Pacific, we found there are limited allowances earmarked for families and caregivers compared to countries in the West, where schemes such as paid leave, respite care, tax credits, and counselling services are more commonplace. Shingo Hayashi, a Depression patient in Japan, founded ß Trip, a community platform with 4,400 members, because little help was available for families and caregivers.

The cost of not addressing the state of Depression in the Asia-Pacific will add up to billions and even trillions of dollars over time, across public and private sectors, direct and indirect outcomes – putting pressure on the region's finite healthcare resources and diminishing prospects for broader economic prosperity. The economic burden of the Major Depression and its sub-types ranks among the highest of all diseases and is growing at a double-digit pace, including with adverse consequences to other comorbid physical and mental conditions.

That only scratches the surface. In a study done by Korea Health Insurance Review and Assessment Service, while 700,000 patients are currently being treated for Depression, it is estimated that there are more than 5 million people living with Depression who may need help [40]. In Hong Kong SAR, where working hours are 38% longer than global average, Depression is reported in 31% of the workforce [41]. 2020 has been a tough year for everyone, we must keep a better pulse on our collective mental well-being.

"While the direct costs of Major Depression are known, the broader impact of suicide is much higher," said Yunu Choi, Founder of Mental Health Korea. "Earlier intervention and supporting initiatives such as return-to-work programs have clear return on investment. This requires a targeted outreach approach though as it can take nearly three months in Korea for someone with Depression to seek help."

Indeed, absenteeism is rising in the Asia-Pacific, now equating to 32 workdays (one month!) lost each year per person living with Depression [42]. Major Depression and its sub-types can be highly correlated to productivity loss if treatment is not managed appropriately. The cohorts we spoke to feel that return-to-work programs are not yet future-proofed for Depression patients.

"Loss of productivity is key, not only for an individual but for an entire nation," said a psychiatrist in Korea. "We've focused for years on physical health, it's time to prioritize mental health too, to understand the full range of direct and indirect costs of Major Depression."

Key policy considerations:

1
MDD-specific indicators

In the Asia-Pacific, there is wide variability in resource allocation (as it pertains to % of GDP) towards healthcare in general but mental health in particular. This needs to be addressed appropriately and urgently. Specific indicators for Major Depression and its sub-types, such as prevalence (i.e. reporting issues), coverage, guidelines, and care system access, should be prioritized.

2
Awareness and understanding

General attitudes and understanding of Major Depression and its sub-types needs improvement, along with better diagnosis and access to innovative new treatment in order to address depressive symptoms at an individual level.

3
Cost consideration

Depression has huge social and economic impact - the direct and indirect costs of failing to address the MDD spectrum in the Asia-Pacific may already be costing trillions of dollars to this region, slowing its economic progress and future prosperity.

Patient spotlight

1st Diagnosis

- Forced to go to the psychiatric hospital
- Hospitalized for 1 month and symptoms subsided

8 Years later

Relapse #1

- Had suicidal thoughts with his family

Now

Managing well

- Has learnt to deal with Depression episodes

Became the Head of Korea Mania

"Looking back, I would have sought appropriate medical help as soon as possible to improve my chance of recovery"

Jeong

Asia-Pacific perspectives: Policy recommendations for a supported MDD future

Bearing the above challenges in mind, there is a window of opportunity for leaders in the Asia-Pacific to act now so as to establish the right-sized care systems and policies for harnessing, rather than reeling, from the socioeconomic impact of demography changes. The rise in Major Depression prevalence is in part due to a reducing stigma and improvements in diagnosis. So, the platform for appropriate focus on Major Depression and its sub-types is in place. The regional snapshots in this report provide more detailed examples of solutions and ideas from across the Asia-Pacific. Below we summarize a checklist of suggested policy actions for consideration, and reiterate the importance of continued public-private dialogue to shape a more targeted care system together for the Major Depression spectrum.

Enforce nation wide standards for educational campaigns to improve Depression understanding

Drive more conversations about Depression through youth channels and influencers

Strong Major Depression understanding programs require a whole-of-society effort. It is an essential strategy to embed training and intervention in school systems for early recognition of signs and symptoms, reduction in stigma, and improved adolescent behavior toward seeking help. Research has shown that such strategies result in nearly 50% of students approaching teachers with concerns about themselves or others, of whom 50% require further intervention [43].

The Time to Change campaign in England provides training to all school administrators and teachers, covering lectures, testimonies, role play, and interactive performance. The campaign reported a near-term marked decrease in discrimination against mental disorders. The Mental Health Law 2012 in China Mainland, similarly, requires all schools to teach about such matters [16].

Many regions in the Asia-Pacific deploy strategies to raise understanding of Major Depression using visible profiles too. In Hong Kong SAR, following cases like the 2003 suicide of a famous singer and another celebrity in 2018, positive reinforcement messaging such as the "Shall We Talk" program explains that such episodes are not due to personality flaws, but rather due to serious health conditions. Likewise in Australia and China Mainland, athletes, actors, TV hosts, and other known public figures are speaking more openly about their own mental health [6].

In the US, the Born This Way Foundation, empowering young people to practice mental and emotional wellness, was established by Lady Gaga. Together with the US National Council for Behavioral Health, the Born This Way Foundation rolled out the Mental Health First Aid (tMHFA) training to workplaces, care facilities, among other settings. Like the concept of CPR training, the aim is to raise average mental health literacy around signs, symptoms, and responses required in order to prevent premature deaths [44].

Require employers (public and private) to provide proper Depression training and support

Population productivity is key for Asia-Pacific leaders, and return-to-work programs stand to be an important component of Depression recovery initiatives when executed well. At the same time, work-related stress can exacerbate Depression. So policies governing mental well-being of employees, enforcement of workplace procedures for equal opportunities, and catering to the full spectrum of MDD are necessary. As we heard from a number of stakeholders, those with debilitating Depression tend to heal better when the work-leave programs are properly formalized, funded, and coordinated.

British Telecom (BT) in the UK is perhaps one of the most known for its progress in this area. BT has trained more than 6,000 front-line managers in the identification and basic management of mental illnesses such as Depression [45]. With ongoing support and emphasis starting from the top of the organization, BT has seen significant improvements to morale and performance - a 24% decrease in stress levels and an 80% return-to-work rate for those who take leave of absence for mental disorders (the industry benchmark in the UK is 20% [45]). BT is also leading the way on reducing presenteeism to derive wider benefits from the program in the form of a more productive, happy, healthy workforce. Importantly, the company ramps up such services during times of crisis.

Japan faced a similar challenge with the nationwide rise in suicide as a result of work-related stress and a <3% uptake of Employee Assistance Program (EAP) counselling services [6]. Starting from 2015, the Industrial Safety and Health Law obliges companies with at least 50 employees to provide annual "stress checks". Not only do the checks serve as a diagnostic of people's mental well-being, they are moreover an educational platform for all employees. Japan has also enacted a "ReWork" program ("Return-to-Work") for rehabilitation of those with severe mental illness after extended periods of sick leave. The program includes a mock office environment for simulation exercises to help facilitate return to work.

In Australia, the "Heads Up" initiative run by Beyond Blue, and funded through the government, provides employers and individuals with access to free tools and resources to address workplace mental well-being. For every dollar spent on the program, Australia estimates an AUD 2.30 return in direct and indirect benefits back to the sponsoring organizations [46]. Such collaboration channels for employee mental well-being, including the City Mental Health Alliance Hong Kong, are highly recommended for all regions.

Prove commitment to tackling Depression by establishing nationwide platforms for scale

We do recognize the aligned efforts already happening in Asia-Pacific. Australia holds Mental Health Awareness Month, in which a different mental health sub-condition is highlighted on each day. The Beyond Blue organization moreover posts advertisements on trains in order to reinforce the message to help reduce ongoing stigma. In Australia, it is said that the population are highly-literate about mental health, and nearly 50% of people who have an illness are now seeking help [47]. This is encouraging and something that should be emulated in other parts of the Asia-Pacific.

Similarly, China Mainland has declared September 20th to be Depression Patient Day. Taiwan has rolled out a Depression self-testing scale for people to detect symptoms and to actively seek medical help. In Hong Kong SAR, local universities have developed curriculum to help primary care physicians to enhance their own knowledge of mental illness, some of whom are taking it a step further by serving as champions for first-line Depression care [6]. In summary, we do see ideas and progressive changes happening, but these are like spot fires that need to be joined up to see impact more broadly. This is where policy could play a part to provide further impetus and scale to drive change.

Provide sustainable coverage to shift toward proper Depression diagnosis and treatment

Ensure healthcare planning cycles recognize and place an emphasis on MDD as a spectrum

Though many stakeholders agree that coverage models for mental healthcare have improved dramatically, we should not be complacent. There is a need to ensure that such coverage models allow people suffering from MDD sub-types like TRD to receive the appropriate care and attention without feeling that the financial costs are too high.

For starters, budget allocation towards mental healthcare is quite varied. Whereas markets like Germany and New Zealand allocate around 10% of their already-sizeable total healthcare expenditures toward mental disorders, Japan, Korea, China Mainland, and Taiwan allocate less than 5% of their more modest healthcare budgets [45]. One country in the Asia-Pacific is truly exceptional - Australia, which allocates nearly 8% of its healthcare expenditures (that are already 7th highest among OECD nations) for mental health [48]. All mental healthcare services are free for citizens, including visits to the psychiatrist and other care level specialty needs. There are additional reimbursement allocations for utilizing transitions from inpatient to outpatient settings which, as aforementioned, is in line with broader health reform [6].

China Mainland has adopted the 2012 Mental Health Law as well as the 2015 National Mental Health Work Plan. Components of the plan include rescue assistance for MDD patients ("first-aiders" program), as well as Article 29 allowing physicians with psychiatric qualifications, wherever they practice, to diagnose and treat mental disorders [6]. With mental healthcare increasingly covered through such national plans, this paper encourages Asia-Pacific leaders to incorporate the targeting of MDD and its sub-types in their policy initiatives.

Foster a Depression support network that is inclusive of families and caregivers

Caregiver networks are another key mechanism to improve the sustainability of Depression support, like the Tulip Sunshine Group in China Mainland which has more than 20 provincial locations and covering up to 30,000 people living with Depression [49]. These networks typically use WeChat for quick communications, hobby activities, online videos for families and caregivers, and even group dining activities. Such programs, which could stand to become more formalized through national policies, encourage those supporting people living with Depression to help each other.

Most OECD nations allow reimbursable leave to care for sick family members. In Belgium, for example, caregivers can get up to one year of leave. Under Japan's Family Care Law, each citizen has a lifetime allotment of 93 days of leave that can be shared with family members in the case of serious illness. Concurrently, 40% of wages remain protected by the Japanese government throughout the leave period [50].

Deploy new models of care that are a more effective and efficient use of resources

Empower the use of digital tools for the Depression care system

The world is experiencing its "digital revolution" and, although healthcare is late to adopt such technologies, there is a need to revolutionize care and support for people with mental illness. Wearable tools and virtual consultations can help to address the geographic remoteness challenges mentioned previously. These techniques bridge the urban versus rural divide, promoting health equality and improving health outcomes.

China Mainland is actively leveraging digital approaches, like the more than 60 internet-based counselling platforms (compared to only 1 in 2014 [51]). Jiandanxinli, with over 100,000 registered users, allows psychiatrists and other approved care providers to connect to patients all over the country. Australia, a nation with variability in geographic and psychiatric coverage, is observing a similar phenomenon. They are taking a life-course approach to tailoring the digital services towards young people, working-age adults, and the elderly, as well as to cater to their respective MDD support needs. Holmusk, a platform out of Singapore, is capturing real-world data so as to enable better connectivity between patient support services across the physical and mental health pathways in the Asia-Pacific, and as a means to better understand the unmet needs and prioritization targets therein [52].

Borrowed from the past but still effective, regions in the Asia-Pacific continue to put in place help hotlines for the general population. For example, Taiwan has legislated the Suicide Prevention Act since 2019 with dedicated help hotlines. In Japan after the number of suicides each year exceeded 30,000, the government ramped up access to care for mental health through the "Phone of Life [6]", which is a hotline anyone can call to speak to qualified volunteer staff who have permission to make referrals to specialists.

We also look to countries like the US which allow the use of tele-psychiatry, with reimbursement. Not only does such a service reach the rural and marginalized communities, it is a work-around for the stigma issues in the short run.

Reorganize care and treatment pathways that reflect a patient-centric mindset

The integration of psychiatric support for MDD along its spectrum of sub-types is a viable option for policymakers. Such integration and coordination have proven effective in minimizing stigmatization, increasing referrals, and, most importantly, improving treatment outcomes. Indeed, evidence shows that MDD patients who are under collaborative care model schemes have double the chance to recover.

The Regional Health Care Strategic Plan in Japan contains national guidelines for balancing institutional and community-based care for MDD patients through the integration of physical and mental health monitoring. In China Mainland, likewise, a pilot of the "686 Program" for integrated hospital and community services of severe cases was passed into law in 2013, recognizing mental illness as a chronic disease to be managed accordingly. Australia has joined community and specialist mental healthcare together through capacity-building frameworks [6].

In Taiwan, the health system is moving toward a managed care, capitation-style model in order to drive more targeted physical and mental support for the population. Programs like Mind in Hong Kong SAR, likewise, are directly aimed at providing the connectivity between care levels and referral procedures so as to improve communications and flow across the system. Clearly the trend toward next-gen MDD spectrum care delivery models, online and offline, is arriving and there are a number of best practice examples for regional leaders to leverage [6].

Stay at the forefront of new interventions, taking an evidence-based approach

As the science progresses, there will be a host of new, exciting technologies available to address MDD in a targeted manner. We already heard from various stakeholders about the desire to move more quickly to adopt and improve access to these interventions. In other areas such as cancer and rare disease, fast-track pathways have been created to rapidly assess and provide access to novel interventions for the population.

"Intrinsic Depression is real – it's a biological condition that is activated through the stressors of life," said Dr. Alfred Pang, Consultant Psychiatrist at the Hospital Authority in Hong Kong SAR. "Adjunctive therapy for MDD and sub-types like TRD is a must-have, this is the critical gap in mental care at the moment."

We encourage regional leaders therefore to build capacity for early adoption and diffusion of such technologies, in an evidence-based manner.

Key policy considerations:

1
Awareness and understanding

Improved understanding of MDD and its spectrum of sub-types can be achieved – start young, leverage an ecosystem (influencers, employers, families, caregivers), and encode such tactics as an enforced nationwide standard.

2
Sustainable coverage

Proper diagnosis and treatment for MDD sub-types like MDD with suicide ideation and TRD require sustainable coverage models. Include the MDD spectrum into national planning, share best practices, and continue to build out the patient support networks.

3
Innovative models

New models of care can make more efficient use of allocated resources. Patient pathway integration, the use of digital platforms, along with more targeted treatment and care for the MDD spectrum have the potential to change the course of Depression.

Looking into the future, we paint two possible pathways – one that continues toward the less-than-desired outcomes, and another that fosters a healthy, productive population without Depression:

Scenario 1: Continuing with the current path (good, not great)		Scenario 2: Rethinking the MDD spectrum pathway (from good to great)
Jane has been depressed, but thinks it is caused by insomnia.	1	Jane has been depressed and has suicidal thoughts. Her family and colleagues encourage her to see a doctor.
She keeps mum, fearing judgement. Soon, she has suicidal thoughts and visits a GP.	2	Jane sees a poster about a celebrity's depression journey and decides to visit a GP.
After 5 minutes of visit, her GP prescribes a generic anti-depressant.	3	Using the DSM-5 framework, her GP diagnoses her with MDD with suicide ideation, Jane gets a targeted anti-depressant and help from a social worker.
Jane doesn't improve for weeks. She postpones her next GP visit to save money.	4	Jane's social worker regularly calls in to check on her, remind her about medication, and reports her progress to a psychiatric consultant.
After 2 months, she finds herself on edge and visits the GP. She receives a new type of generic anti-depressant.	5	Jane opens up about her situation to colleagues. They express empathy and grant her long leave to recuperate.
Her condition worsens. She gets dismissed by her employer due to high absenteeism.	6	Jane returns to the GP to seek additional help. Her GP and a psychiatric consultant prescribe another type of anti-depressant.
Her GP refers her to a psychiatrist in the city. Jane delays her visit for weeks, deterred by the distance.	7	Jane's condition is stable but unchanged. Her GP refers Jane to a specialist. Her social worker facilitates the process and assures that the fees are reimbursable.
The psychiatrist diagnoses her with MDD and prescribes MDD-specific anti-depressants.	8	Jane's mother utilises her caregiver's leave to care for Jane. She feels supported by her family and friends.
After 2 types of MDD specific anti-depressants, Jane does not improve.	9	The psychiatrist classifies Jane's condition as TRD and suggests a novel, more targeted intervention.
Her doctor classifies her condition as TRD and suggests ECT treatment.	10	Jane recovers well after the treatment and maintains regular tele-consultation with the psychiatrist.
Jane feels better but suffers from ECT side effects such as memory loss.	11	Before returning to work, the hospital offers Jane a mock office simulation as rehabilitation therapy.
Jane returns to work. She informs her new employer of her condition, but she still gets overloaded and receives insensitive remarks.	12	Jane returns to work feeling stable and refreshed. Her colleagues ensure she's not overloaded and regularly check in on her.
Jane relapses a year later, languishing in feelings of hopelessness and suicidal ideation.		Jane is relapse-free. Her works improves, and she is able to enjoy a normal, healthy, productive life.

Let's be bold and work together to achieve Scenario 2 (and beyond). This paper has outlined a roadmap for a future that is possibly free from Depression, the first step being to recognize that not all forms of Depression are equal and that certain sub-types impose a disproportionate burden on our healthcare systems, societies, and economies at large. We must address these challenges effectively and efficiently by making right-sized evidence-based investments, aligning policy goals to match unmet needs across the spectrum of MDD, adopting innovative new technologies, and using best practice care. After all, an empowered, mentally fit population stands to play a central role in achieving the economic success and social cohesion that is the ambition of Asia-Pacific leaders. We look forward to continuing the conversation together.

Australia dashboard

Socioeconomic status and MDD landscape

Market Indicators

Population size: 25.5 million [53]

Aged 65+: 15% [54]

Healthcare spend vs GDP: 9.2% [55]

Mental health budget vs total: 7.6% [56]

Disease Indicators

Mental illness prevalence: 1 in 5 Australians, or 12% of total DALYs [57]

MDD: 8% of total DALYs [58]

MDD cases that have become TRD: Data not available

Suicide: 11.7 deaths per 100,000 people [59], 75% of which are male

MDD Scoring

Annual per capita mental health expenditure: $400 [56]

Public funding / Medicare reimbursement eligible for mental health: 100% [16]

Trained psychiatrists: 13.25 per 100,000 people [60]

National policy mention of MDD: ✓

Use of international MDD guidelines: ✓

Other Facts

All psychiatric services and medications are fully-covered by public funding / Medicare where eligible [16]

Burden of mental health disorders is more than heart, respiratory, and cancer diseases combined [127]

8 million working days are now lost each year due to mental illness [61]

17% of the population are receiving mental disorder-related prescriptions [62]

Mental health literacy is estimated to be 60%, with 85% believing in the severity of Depression [63]

34% of people on government disability support schemes have a primary condition of "psychiatric [57]"

This burden has increased by 13.5% over the past decade [64]

The cost in absolute terms, including ramifications of suicide, is $74 billion annually [64]

Australia has some of the most advanced mental health infrastructure and policies in the Asia-Pacific. All mental health services are covered for citizens under the universal public health insurance scheme known as Medicare. Once someone is diagnosed with mental illness, there is a strong referral system. The Mental Health Services in Australia (MHSA) web report is published each year with a high degree of data transparency to the public, the most recent update being in July 2020.

Although stigma does linger, Australia emphasizes a variety of educational awareness campaigns [128]. Nationwide Mental Health Awareness Month, for example, in which a different mental health sub-condition is highlighted on each day. Famous athletes and actors are frequently speaking out about their mental health. The Beyond Blue organization posts advertisements on trains in order to reinforce the stigma reduction messaging [128].

Furthermore, the "Heads Up" initiative run by Beyond Blue, funded through the public sector, provides employers and individuals with access to free tools and resources to address workplace mental well-being. For every 1 dollar spent on the program, Australia estimates a return of 2.30 dollars in the form of direct and indirect benefits back to sponsoring organizations [65].

And while Australia does invest heavily in its mental health, the stakeholders we spoke to suggest that now is the time to start driving to a deeper level in terms of the MDD spectrum, especially with the National Mental Health Commission's "Vision 2030" planning efforts underway.

Recently, Beyond Blue expanded their training and education programs to target MDD pathways, including stigmatization and abuse around medication. The Therapeutics Guidelines Administration (TGA) has begun to officially recognize TRD as well, and the region is regarded as having one of the lower thresholds for specialist referrals.

"Rather than suggesting a huge rise in prevalence, we should think of the growth in MDD cases as improved diagnosis and decreased stigma," said Dr. Grant Blashki, Professor at University of Melbourne and Advisor to Beyond Blue. Dr. Blashki notes a "generational change" arriving in community perceptions about Depression.

Investments to strengthen the referral system is required to ensure it can meet the future demand for mental health service, in anticipation of what will be increased pressure on the entire system (physical and mental health). We did hear from some stakeholders that access to services and therapies can be difficult at times, including for those already within the system. Such anticipation caters to Australia's role of being a leader for mental well-being in the Asia-Pacific.

"TRD is part and parcel of what we do as psychiatrists, because typically patients have already tried various medications before they see us," said Professor Chris Davey, Head of the Dept. of Psychiatry at the University of Melbourne in Australia. "We cannot continue to just trial more antidepressant medication; by the time the sixth one has failed, it's unlikely the seventh will work."

Spotlight: Australian Football League Players' Association (AFLPA)

According to Matt McGregor, Mental Health Network Services Lead for AFLPA, there has been a dramatic improvement in how the league is handling players' depressive conditions. It started with a few "brave souls" about 10 years ago, paving the way for reduction in stigma, increased education to coaches and staff, and modernized levels of service beyond the traditional phone help line. In each instance after an education session, there is a spike in referrals – people who have been seeking help for a while, but were unsure where to go.

"The spectrum is reassuring for people living with Depression to have a sense of description and category, to know that there is science behind what they are feeling," said McGregor. "Ultimately most people want practical and proven solutions."

One technique that McGregor lives by: storytelling. Not only about issues, but also ideas for how to overcome them – therapeutic as well as preventative. Instead of his players expressing how they feel, McGregor coaches to talk about what they did that helped.

Policy Calls-to-Action: Top 5

- Budget allocated to mental health in Australia is noteworthy. A next step would be to address resource efficiencies therein, including targeted MDD and sub-type pathways.
- Provide a layer of detail in national health planning that discusses the MDD spectrum, including TRD. For example, earlier diagnosis and data capture in the primary care segment.
- Involve all constituents – including employers, families, caregivers – in building a new ecosystem that is more conducive to those in the MDD spectrum pathways.
- Take a front foot in adopting new technologies – digital health platforms for remote support, as well as more advanced interventions for those with hard-to-treat conditions.
- As a leader in mental health programming, actively guide peer countries in Asia-Pacific. There will be broader social and economic gains from such collaborative integration.

China Mainland dashboard

Socioeconomic status and MDD landscape

Market Indicators

Population size: 1.39 billion [66]

Aged 65+: 11% [67]

Healthcare spend vs GDP: 5.3% [68]

Mental health budget vs total: < 1% [69]

Disease Indicators

Mental illness prevalence: 1 in 6 Chinese, or 36 million DALYs, 10% of total [70]

MDD: Lifetime prevalence of 3.3% in the population [71]

MDD cases that have become TRD: 30% [16]

Suicide: 9.7 deaths per 100,000 people, 62% are rural residents [72]

MDD Scoring

Annual per capita mental health expenditure: $24 [73]

NHI reimbursement eligible for mental health: 90% [16]

Trained psychiatrists: 2.2 per 100,000 people [60]

National policy mention of MDD: ✓

Use of international MDD guidelines: ✗

Other Facts

All psychiatric services and medications are fully-covered by NHI [16]

16% of Depression costs are direct, while the rest is borne by mortality, comorbidities, families [74]

Depression conditions are estimated to slow China Mainland's productivity by $9 trillion [75]

13% of patients with MDD were reported to have attempted suicide within 1 year, more frequently from rural area [126]

45% of people with TRD experience 4+ episodes, compared to 5% of MDD patients [16]

About 50% of MDD patients respond to frontline antidepressants, with remission rates below 33% [76]

TRD medical costs are 75% greater than MDD, with a 22% higher rehospitalization rate [16]

18% of people with TRD are suicidal already at baseline [16]

Despite the large population health challenges and relatively low investment as a percentage of GDP, China Mainland has confirmed its focus on mental health with adoption of the 2012 Mental Health Law as well as the 2015 National Mental Health Work Plan. Ambitions include a doubling of the number of psychiatrists, improvement in services, and earlier intervention such as through increased reimbursement for certain disease categories and hospitalizations. This is in line with China Mainland's broader universal health coverage reform to expand care access to all citizens.

Having participated in the development of the 14th Five-Year Plan of Mental Health in China Mainland, the Psychological Assessment Committee is optimistic about public perception, especially for the younger generation. According to a member of the Committee, Depression is now allocated with a greater proportion of the overall healthcare budget and is listed as one of the major illnesses to tackle. Other stakeholders informed us, with 50+ million people suffering from Depression, about expectations of encouragement for higher frequency doctor visits at every 1-2 months, for example, and that up to 90% of patients may no longer require extended hospitalization [16].

That being said, China Mainland faces a tall order. Mental illness as a portion of total DALYs increased from 7% to 10% [70]. There are only about 20,000 psychiatrists for the country's 1.4 billion people, meaning an estimated 92% of the 173 million people with mental disorders are lacking support [77]. According to surveys, few patients are informed of their Depression diagnoses; and TRD now accounts for more than 20% of all MDD cases [78]. Not to mention lingering issues of stigma, geographic variability, low health literacy, and limited coverage for outpatient services.

Patient Li of China Mainland used to work for an Internet company and is now operating a 6,000-person WeChat patient support group. "I have had Depression symptoms since high school, but I didn't go to the doctor because I did not think I was ill. Once the symptoms worsened, I went to the hospital (about six months later). I learned about the MDD spectrum myself. Many people, like me, mistake Depression as a general mood issue in which no treatment is needed." Patients in China Mainland also spoke to us about the (costly) misuse of interventions such as psychotherapy and traditional medicine paste to address Major Depression conditions.

China Mainland leadership are making a noticeable effort. Article 29 of the Mental Health Law allows for any physicians with psychiatric qualifications to diagnose and treat mental disorders. The Law requires all schools to teach students about mental health. While MDD is not explicitly outlined as a priority, Bipolar disorder is and one of the general government goals is to improve treatment programs across Depression categories. The "686 Program", furthermore, is piloting the integration of hospital and community services for mental illness.

Given the resource and geographic constraints, new communication channels are being explored. September 20th is officially Depression Patient Day, and TV hosts are frequently leading public discussions to raise awareness. There are more than 60 internet-based counselling platforms (compared to 1 in 2014) [79]. Jiandanxinli, with over 100,000 users, allows virtual connectivity between psychiatrists and patients [79]. Tulip Sunshine Group has more than 20 provincial locations, leveraging WeChat for family and caregiver connectivity and education [80].

As for MDD, the topic is fairly progressed in China Mainland as compared to the rest of the Asia-Pacific. The "first aiders" program for MDD is outlined in the national plans. With up to 50% of COVID-19 patients presenting a severe form of Depression, bespoke psychiatric crisis intervention guidelines have been created [16]. So now the focus needs to be on digging in to the MDD spectrum detail, including TRD. Currently no medications are approved for TRD in China Mainland, and the use of non-standard guidelines such as CCMD-3 are observed [6]. "Those who seek help are usually willing to talk about their episodes," said a psychiatrist from West China Hospital at Sichuan University. "There is no single optimal treatment for everyone due to the individual needs and conditions."

Patient spotlight

2002
Diagnosed depression

2005
Relapse #1

2010
Relapse #2

2015
Relapse #3

- Hospitalized twice at 1.5 months & 2 months respectively
- Likely due to self-decision to stop medication

Can accept condition calmly now

Fluctuating conditions: Feeling useless during relapses but negative thoughts were eradicated when medication was effective

Zhu

"The emotional impact of Depression is greater than the financial impact. Support from loved ones, especially family is essential in the journey of recovery, otherwise Depression will relapse."

Policy Calls-to-Action: Top 5

- Stakeholders advised us that TRD understanding is too low. Driving intentional education campaigns about the MDD spectrum will improve diagnosis rates and targeted intervention.
- Seek to scale up MDD spectrum efforts through medical societies (highly respected in local culture) and also by ensuring that employers have robust programs in place too.
- Get up to speed and align with the latest international guidelines for the MDD spectrum and in particular TRD. Including use of digital tools as well as novel therapeutic interventions.
- As 2020 master planning comes into picture, incorporate a level of MDD spectrum detail that reflects the desired integrated patient experience and a stronger referral system.
- Be clearer to patients, families, and caregivers about how the inclusive coverage schemes will work. Detail is needed by service type, setting, and reimbursed treatment choices.

Hong Kong SAR dashboard

Socioeconomic status and MDD landscape

Market Indicators

Population size: 7.51 million [81]

Aged 65+: 17% [67]

Healthcare spend vs GDP: 6.2% [82]

Mental health budget vs total: 10.3% [83]

Disease Indicators

Mental illness prevalence: 1 in 7 Hongkongers, 74% of whom do not seek help [84]

MDD: Lifetime ranges from 1.5%-8.4% [85] (data capture challenges)

MDD cases that have become TRD: Data not available

Suicide: 12 deaths per 100,000 people, an increase of 50% for those under age 19 [86]

MDD Scoring

Annual per capita mental health expenditure: $316 [16]

NHI reimbursement eligible for mental health: 90% [16]

Trained psychiatrists: 4.5 per 100,000 people [87]

National policy mention of MDD: ✗

Use of international MDD guidelines: ✓

Other Facts

Eligible covered public sector services include psychiatry as well as medication

78% of mental health expenditures are for hospital purposes [88]

Despite a culture of high work stress, EAP uptake is estimated to be <1% [6]

Workplace-induced Depression costs Hong Kong an estimated HKD12.4 billion each year [89]

Hong Kong SAR is a small but stable market, often seen as a location of high-quality healthcare. The SAR's mental health budget is noticeable and focused. Awareness has been a key pillar for nearly 20 years. Following the 2003 suicide of a famous singer (during the SARS crisis), intentional positive reinforcement messaging seeks to continually educate the public that such episodes are not personality flaws, but rather due to serious health conditions. The new "Shall We Talk" program extends the campaign through to modern social media techniques.

Local universities have developed curriculum to help primary care physicians to enhance their knowledge of mental illness, some of whom serve as champions for first-line Depression care in support of their peer networks. Programs like Mind, the connectivity between care levels and referral procedures, and City Mental Health Alliance, for employers, provide streamlined communications across what would be considered chasms in other regions.

There is tension in the coverage schemes, however. With a sizeable portion of the local population reporting cost and lack of insurance as major barriers to seeking help [90], we heard from stakeholders about looking to the expat community as a proxy for how full (albeit private) coverage can be made possible. Available treatment is spotty, and response times may differ depending on what part of the island you are in (we heard up to 127 weeks for New Territories East). Most MDD patients end up presenting in the public sector, where 24/7 support can be obtained. A once-monthly consultation is far below recommended guidelines, and a reimbursed budget of $10 is meant for 16 weeks of medication [91]. MDD cases seem to default to CBT.

The work-life in Hong Kong SAR is also an area worth monitoring. Working hours are 38% longer than global average, and Depression is already being reported in 31% of the workforce [89]. Yet with only 4.5 psychiatrists per 100,000 people (half of the WHO recommendation), support is challenging [87]. According to our stakeholder interviews, the MDD spectrum is not typically discussed in the workplace and personal disclosure is contentious. Staff taking extended leave starts to get noticed, and a suicide may be the ultimate trigger point for an employer to act. Not everyone makes the connection between MDD and suicide – we heard there is a lack of understanding about how to help someone, and "I had no idea…" is a common post-event reaction. Given the recent turmoil in Hong Kong SAR too, we must look beyond reliance on EAP.

While about one-third of MDD patients are recovering with basic treatments, the latter two-thirds are comprised of those with very severe, even treatment-resistant forms as well as those in which medication helps but with unresolved issues [6]. According to the stakeholders we spoke to, Hong Kong SAR must not forget about this "missing middle". Targeted, tailored, multidisciplinary treatment programs will deliver results.

"Effectiveness of treatment goes hand-in-hand with the technology deployed," said Dr. Hannah Sugarman of Mind Hong Kong. "Also key are the social environment, relationship with the doctors, and personal motivation too."

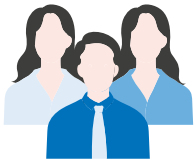
Policy Calls-to-Action: Top 5

- Continue the strong leadership role in driving educational campaigns across the island. Give consideration to amping up more angles of the spectrum, such as MDD with suicide ideation and TRD.
- Ensure health planning is inclusive of mental illness. This means a focused sub-plan, detailing the full MDD spectrum, and with proper coverage schemes.
- Foster greater collaboration between public and private sectors. A quick win is to address the role of employers, and the work-life MDD stressors that people face Hong Kong SAR.
- Consider an MDD patient journey mapping exercise – What do patients, families, caregivers want to see in their spectrum support networks? What does "great" look like to them?
- Lean and leapfrog - take the opportunity to utilize the latest technologies and interventions available, consistent with the broader Hong Kong SAR socioeconomic vision.

CITY MENTAL HEALTH ALLIANCE HONG KONG

City Mental health Alliance HK

Expert-guided (Clinicians)



Member-led (Workplace)

Recent efforts:

- Gathering systematic data in order to make evidence-based decisions and changes.
- Collaborating together with public sector on the workplace charter for mental health.
- Emphasizing that employers have a key role to play in terms of raising income levels to better balance the public/private use of the healthcare system.

Research & data collection

- Conducts bespoke research with employees from individual firms and across Hong Kong SAR companies
- Provides comprehensive reliable data to understand Hong Kong SAR's unique challenges, to track change, and to inform individual workplace strategy

Training

- Works with leading organisations including Black Dog Institute in Australia and Mind HK to develop high-quality mental health training programs, tailored to staff in the corporate workplace

Toolkit and resources

- Members collaborate and work together to develop tools and resources specifically tailored and designed to support the business community on workplace mental health

Events & advocacy

- Holds regular networking events and seminars with international speakers designed to share best practice and inform CMHA HK members and the wider community on the latest topics and research on workplace mental health
- Collaborates and engages in work with business leaders and influencers in Hong Kong SAR

Individual member support

- Supporting each organisational member with their workplace mental health strategy including support with hosting in-house events, training options, and strategy development

Media

- Engaging with the media to increase mental health awareness and ensure that businesses can take an active role in the mental health agenda in the Hong Kong SAR community

Japan dashboard

Socioeconomic status and MDD landscape

Market Indicators

Population size: 126.3 million [92]

Aged 65+: 28% [67]

Healthcare spend vs GDP: 10.9% [68]

Mental health budget vs total: 5% [93]

Disease Indicators

Mental illness prevalence: 1 in 5 Japanese, only 34% of whom seek help [94]

MDD: Up to 7% lifetime prevalence, representing 2.3% of total DALYs [95]

MDD cases that have become TRD: 12% [96]

Suicide: 14.9 deaths per 100,000 people, 7th highest among the OECD

MDD Scoring

Annual per capita mental health expenditure: $205 [16]

NHI reimbursement eligible for mental health: 70% [6]

Trained psychiatrists: 11.9 per 100,000 people [60]

National policy mention of MDD: ✓

Use of international MDD guidelines: ✓

Other Facts

All psychiatric services and medications are fully-covered by NHI

Up to 30% of patients could be TRD, with up to 90% non-reaction to second line drugs [6]

Medical costs of Depression are $1.6 billion, with another $6.9 billion in lost productivity [97]

An estimated 30,000 people use EAP services, despite the 1.2 million Despression sufferers [98]

Total direct and indirect costs of Depression in Japan are estimated to be $16 billion [97]

Hospital expenditures comprise 76% of mental health budget [88]

Mental health policy priority came to light for Japan in 2013. The country hit a breaking point when the number of suicides exceeded 30,000 each year, due in part to work-related stress; yet fewer than 3% of people were using traditional EAP methods [6]. Now up to 90% of medical expenses may be covered by national health insurance [16], including for MDD, and initiatives such as "Phone of Life" (volunteer referral hotline) and "ReWork" (return-to-work rehabilitation like mock office simulation) are modernizing the strategy. Since 2015, the Industrial Safety and Health Law obliges companies of at least 50 personnel to provide annual stress checks for employee well-being and education [99].

The country is paving the way in next-gen care delivery models too. The Regional Health Care Strategic Plan contains national guidelines for better coordination of institutional and community-based services, and for integration of physical and mental health monitoring. Under the Family Care Law, citizens are entitled to 93 leave days in their lifetime, which can be shared with family members in the case of serious illness, and with 40% of wages protected during the leave period [100]. Shingo Hayashi, Depression patient, founded ß Trip, a community platform of 4,400 members to provide greater support for families and caregivers.

Nevertheless, there are lingering challenges in Japan with stigma and communications around Depression, as well as attention to the detailed MDD spectrum. The average psychiatrist sees 40 patients per day, where screening for MDD (much less TRD) is not standardized [6]. We heard from stakeholders that 40% of MDD patients show no reaction to first-line therapy, and up to 90% for second-line therapy [6]. CBT is considered time-consuming with few NHI points allocated, and ECT, with a high relapse rate [6], is difficult due to resourcing such as the requirement for an anesthesiologist to be present. "Maintenance" ECT is commonplace, as are frequent cross-hospital transfers.

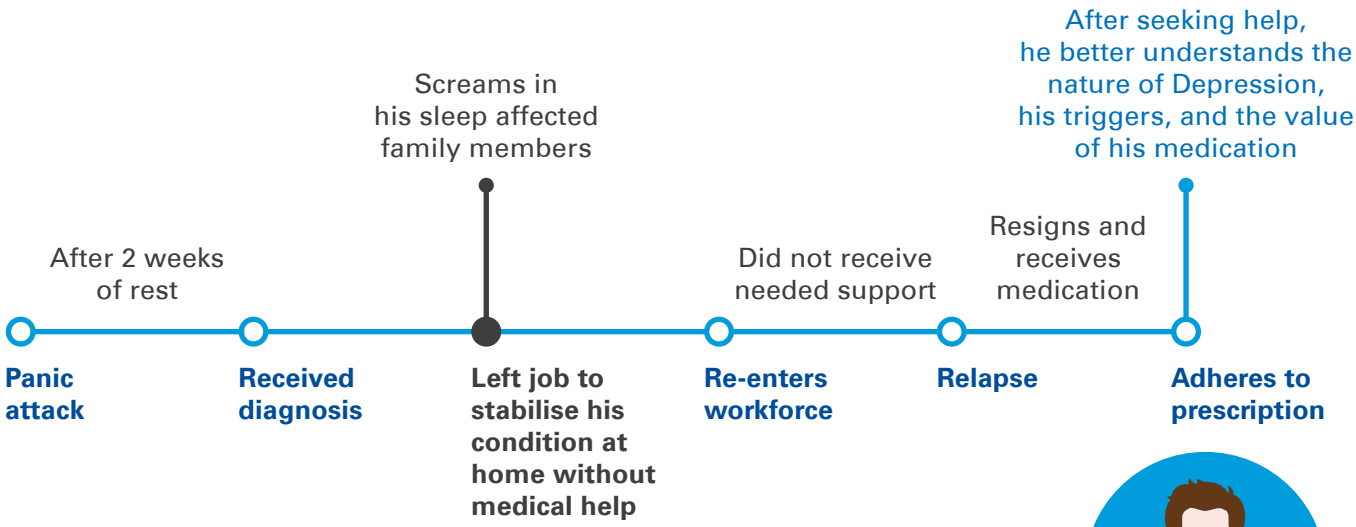
"Some patients do not even tell their doctors that they discontinue taking the medications, and there is no way for the doctors to fully understand the patient's state," said Dr. Shu Shimada, Psychiatrist at the Nishigahara Hospital in Japan. "It is important to have good control of drug adherence and to visit the hospital regularly in order to maintain the remission. I just wish there were more options for people suffering from TRD."

"Hikikomori" is the term associated to someone with MDD, which translates to "staying home out of fear of communicating with others". A study comparing regions in the Asia-Pacific found that greater than 40% of people in Japan believe Depression is a sign of weakness and not a real illness, compared to fewer than 15% in Australia [101]. Psychiatric facilities have been renamed to "mental clinics" to ease the stigma, but more will need to be done. While obtaining a medical certificate enables individuals to achieve the 90% reimbursement coverage versus 70% coverage without, many still choose to forego the certificate in order to avoid being "labeled".

Suicides continue to cost the country $4 billion each year, despite a so-called "Special Fund" given to provincial leaders to drive prevention efforts [102]. High suicide rates, a relatively low percentage of MDD diagnoses, and double the number of psychiatrists per capita as compared to neighboring countries seems to indicate that detailed MDD spectrum planning is a much-needed next step.

"Stigma has been reduced over the past couple of decades," said a psychiatrist from Japan. "Patients now come to me openly about their abuse at work and feelings of Depression. This type of patient did not exist 20 years ago."

Patient spotlight



"A very busy individual who needs proper care and support"

HAYASHI

Policy Calls-to-Action: Top 5

- Drive more intentional, coordinated educational campaigns aimed at stigma reduction. Include the full MDD spectrum such as TRD, and involve academia, consortia in the effort.
- Empower the role of primary care as an MDD intervention and support vehicle. Ensure there is a strong referral system, including an ongoing loop for targeted patient services.
- Patients and families face high out-of-pocket expenses due to the gaps in the schemes (e.g. no certificate). Seek to resolve this in anticipation of a growing MDD burden.
- The focus on suicide in national policy is positive, now look to provide a layer of detail that covers the MDD spectrum. Updated guidelines for TRD diagnosis, treatment are needed.
- Given the high-tech culture, evaluate and make greater use of novel interventional tools. This includes digital health as well as evidence-based therapeutics across the spectrum.

Korea dashboard

Socioeconomic status and MDD landscape

Market Indicators

Population size: 51.7 million [103]

Aged 65+: 15% [67]

Healthcare spend vs GDP: 7.6% [104]

Mental health budget vs total: 2.6% [105]

Disease Indicators

Mental illness prevalence: 1 in 4 Koreans, only 10% of whom seek help [106]

MDD: 2.3% of total DALYS, and a 36% prevalence with co-existing substance abuse [107]

MDD cases that have become TRD: 4% [108]

Suicide: 29 deaths per 100,000 people, highest among the OECD [109]

MDD Scoring

Annual per capita mental health expenditure: $71 [16]

NHI reimbursement eligible for mental health: 70% [16]

Trained psychiatrists: 5.8 per 100,000 people [60]

National policy mention of MDD: ✗

Use of international MDD guidelines: ✓

Other Facts

All psychiatric services and medications are fully-covered by NHI

Depression costs the country $4 billion each year including $1.7 billion in productivity loss [110]

MDD patients require 4-6 weeks of acute support, followed by up to 12 months of treatment [6]

Of discharged MDD patients, 61% are re-admitted due to relapse [6]

OPE for Depression (20%-30%) is higher than other mental illness **(e.g. 10% for Schizophrenia) [6]**

Korea, like Japan, has one of the highest suicide rates in the world. Depression and anxiety, therefore, are the two major mental health priorities for the country. Mental health was explicitly included in Korea's Five-Year Plan, covering early detection and seeking to reduce co-payment inhibitors. Since 2015, people are able to obtain indemnity medical insurance, benefitting from higher levels of coverage. While there remain out-of-pocket expenses too, cost was not identified as a barrier to access. Some employers even have their own in-house psychiatrists.

"Overall, we are equipped with sufficient tools and skills to treat Depression, but face limiting factors that impede our ability to deliver optimal care," said a consortia member in Korea. "Public and private sectors must come together to maximize resources and to leverage expert organizations such as academic societies."

Indeed, while Bipolar disorders have standardized guidelines, MDD is not considered biological but rather a symptom of stress [6]. Interrelated topics such as substance abuse (high alcohol consumption in the country) and postpartum illness seem to lack connectivity in the care pathways. The Five-Year Plan, while ambitious, does not contain specific targets for the MDD spectrum. According to the Korea Health Insurance Review and Assessment Service, while 700,000 patients are currently being treated for Depression, it is estimated that more than 5 million people likely need help [111]. As per our interviews, less than 1% of the total healthcare budget is allocated to Depression, and not divided across the MDD spectrum [6].

"Depression cannot be diagnosed by only having a conversation, because we all have such feelings and thoughts over time," said a psychiatrist in Korea. "Prior medical history and a thorough, objective diagnosis are needed in order to better manage MDD and its sub-types."

People with Depression in Korea typically circumvent the primary care setting, as they often are not receiving the support nor referrals needed for their mental illness. The more than 2,000 types of counselor licenses, across various agencies, is complicated [6]. There is an increasing focus on placing highly trained psychiatrists at primary care levels, which poses an opportunity for Korea to improve the quality of mental healthcare. Nevertheless, treatment regimens tend to be generic medications and some psychotherapy, due to the low service fees for practitioners. Such scenarios are ripe for unidentified TRD.

"Psychiatrists do have sufficient knowledge about topics like TRD, however the intervention options are limited currently," said a consortia member in Korea. "Major Depression often requires inpatient support. TRD patients have longer treatment durations and can lead to higher societal cost if not handled effectively."

Like many countries, stigma remains a challenge too. There are relatively few educational campaigns, despite the high suicide rate. We heard stories of a psychiatric hospital that didn't open to due to neighborhood resistance, and a Depression ad that wasn't shown in cinemas due to the perceived negative reaction by customers. Stakeholders suggested there be more readily available information about MDD support facilities and treatment choices, something akin to the ease of making a booking reservation in the hotel industry.

"Improving perception about MDD is key for targeted intervention," said a psychiatrist in Korea. "Government-led awareness, through the media, is needed about MDD and support networks. To achieve this, public and private sector collaboration could be very effective."

Spotlight: Korea Mania

Jeong's family noticed his excess fatigue, that he wasn't himself, and recommended checking in to a psychiatric facility (where An-sik was forced to stay for one month). The symptoms subsided, but then relapsed eight years later – his most severe MDD episode, including suicidal thoughts. An-sik is now managing his condition on an ongoing basis after learning how to deal with it. The experience led An-sik to become Head of Korea Mania, the largest online patient community for mental health in the country.

One-in-four people in Korea experience mental illness, yet few know what to properly do about it. Depression is seen as a condition for the weak, highly stigmatized, and with few patients sticking to medication regimens. Health literacy is a root cause, and An-sik seeks to change this.

With no standard patient education websites and limited formalized employer programs, Korea Mania offers such a platform. Starting from school-age onward, An-sik is pushing the communication channels. His goal: achieve 90% return-to-work rates for those who are living with mental illness in Korea.

Policy Calls-to-Action: Top 5

- Enforce a national standard for MDD spectrum education, on par with other leading markets in the region. Provide a common platform for access to information.
- Concurrently dig into the MDD spectrum detail, such as TRD. Align medical practice to the latest guidelines, perhaps by establishing a specialist group to be the country's CoE.
- Sort out the MDD coverage gaps. There are inefficiencies (and confusion) related to indemnified claims, primary care, referral network flow, and the lingering OPE incurred.
- Take a closer look at the role of the employer (public and private). This a major part of the culture in Korea, there should be formalized MDD diagnosis, coverage, support programs.
- Get ahead of the technology game to optimize investments - support platforms but also novel therapeutic interventions, and even fundamental tools such as a national hotline.

Taiwan dashboard

Socioeconomic status and MDD landscape

Market Indicators

Population size: 23.78 million [112]

Aged 65+: 15% [113]

Healthcare spend vs GDP: 6.4% [114]

Mental health budget vs total: 4.6% [16]

Disease Indicators

Mental illness prevalence: 1 in 5 Taiwanese, 1 in 3 adolescents [115]

MDD: 1.2% lifetime prevalence, (considered to be underreported) [116]

MDD cases that have become TRD: 21% [95]

Suicide: 12.5 deaths per 100,000 people, at a 2:1 male-to-female ratio [117]

MDD Scoring

Annual per capita mental health expenditure: $128 [16]

NHI reimbursement eligible for mental health: 100% [16]

Trained psychiatrists: 7.5 per 100,000 people [16]

National policy mention of MDD: ✗

Use of international MDD guidelines: ✓

Other Facts

All psychiatric services and medications are fully-covered by NHI

There are more workday lost each year (61) due to severe impairments than in US [116]

Nearly half of TRD patients are hospitalized, as compared to **one-fifth of MDD patients** [6]

One-third of TRD patients are non-responsive to available medications, **with remissions <50%** [6]

69% of MDD sufferers reported "no need" as the reason for not seeking help [116]

MDD sufferers record an average of 74.9 lost workdays each year [118]

Taiwan has a bold yet quiet focus on mental health. The Government's Mental Health Plan 2015-2021 explicitly lists stigma reduction as a key objective. The Suicide Prevention Act, which became legislated in 2019, stood up dedicated help hotlines. Patients are able to apply for disability certificates themselves, to circumvent coverage and access barriers. And broader health reform is driving a managed care, capitation-style model aimed at providing more targeted support, physical and mental, for the population.

As it pertains to Depression, DSM-5 seems to be commonly applied and national health insurance promotes medical treatment as a first-line intervention. Taiwan rolled out a Depression self-testing scale for people to detect symptoms and to actively seek help. The more advanced hospitals have a three-tier suicide prevention strategy - staff training, identification of high-risk patients, and emergency case management. Support groups like the Taiwan Association Against Depression, moreover, are using platforms such as LINE to engage with the communities as a source of education and exchange.

"Our health insurance has been implemented for more than twenty years with high accessibility medical treatment," said a policymaker. "However, continuous support is a major challenge. Patients may stop taking medication or are otherwise impacted by life, work, and social circumstances that require close observation."

Claims data from the National Health Insurance Research Database (NHIRD), and backed by community surveys, estimates that one-year prevalence of treated Depression is around 1% [115], which is quite low and insinuates that there remain difficulties in the identification and diagnosis of patients. Only one-third of people in Taiwan are seeking help for their MDD condition, despite representing twice the number of lost workdays as to compared to US. A landmark report by UDN found that the majority of Depression patients are women between the ages of 45 and 64 – "superheroes in a sandwich generation" who are supporting their parents as well as their children at the same time [119]. The report also observed that Depression patients average three consultations per year, and that 90% of first-time patients do not return to the clinic [119]. With 20% of medical benefits paid for Depression patients going towards antidepressant medications, such disrupted and discontinued treatment patterns lead to worsening conditions and risk of suicide [119].

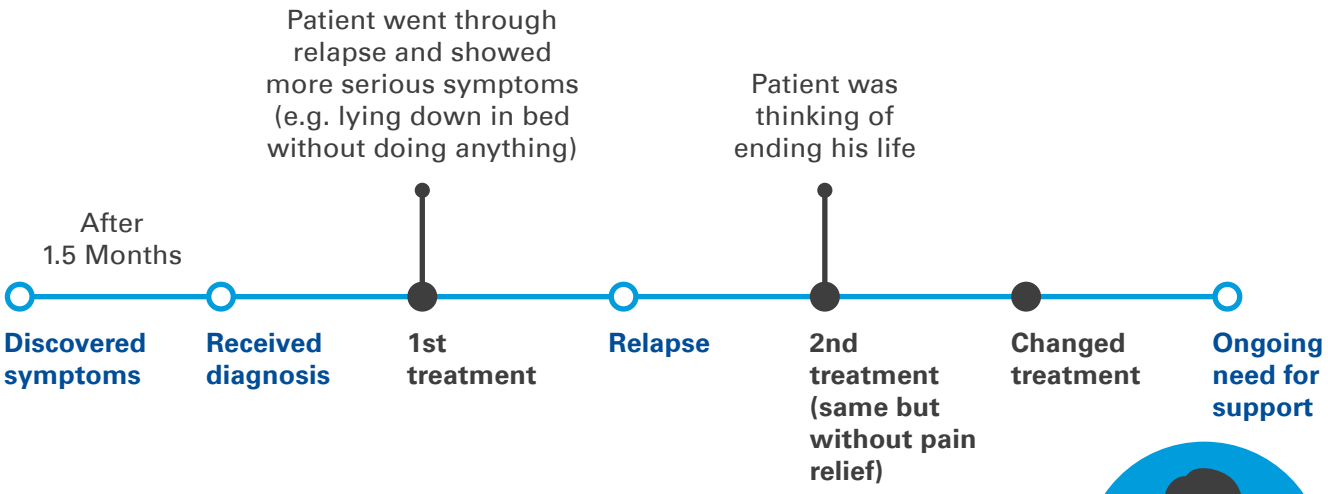
"I think the numbers are likely underreported; patients lack insight into their illness and the public tend to lack education on the topic," said a policymaker in Taiwan. "Depression is hard to recover from without proper medical treatment, and reducing the stigma is one of our critical objectives when forming health policy."

Resourcing appears to be a key hurdle, and overall disease burden of mental illness is rising rapidly. With only 4% of modest total healthcare expenditures going toward mental disorders, there has been limited budget increase observed since the 1995 establishment of the government's health insurance scheme [16]. While at one stage Taiwan faced a shortage of psychiatrists due to practitioners gravitating toward more financially incentivizing specialties, effective policy initiatives have seen the psychiatric field become one of the fastest -growing practice areas. Now Taiwan must seek to levy up its resource allocation in mental health services and interventions so as to appropriately match the need for uptake.

Taiwan must also start to pay closer attention to the full MDD spectrum, including TRD scenarios. As it stands in Taiwan, average MDD treatment duration is at least six months and with a 50% chance that the condition will ultimately become chronic [6]. TRD scenarios, already 21% of MDD cases, significantly elevate the risk of suicide [95]. The Suicide Prevention Act is a good start; however, stakeholder groups have been calling on more policy detail around the MDD spectrum. As the Mental Health Act undergoes revision, now is the time.

"For patients on a treatment regimen who become TRD, there is a high chance of non-response to any future care received," said Dr. Shih-Cheng Liao, Director, Association Against Depression in Taiwan. "The more times TRD patients receive an ineffective treatment, the more likely the next treatment will be in poor result. Early detection of TRD, and adjustment of treatment strategies along with active development of targeted medication support is the solution."

Patient spotlight



"I suggest that we as patients do a better job of sharing our experiences on social media. That receiving treatment for our conditions is a good thing."

Anonymous

Policy Calls-to-Action: Top 5

- Improve data and reporting of MDD and its sub-types. Use the data, while being respectful of patient privacy, for awareness campaigns and to conduct cost/benefit analyses.
- Levy up the resource allocation. Similarly to the positive effect of policy change for manpower, seek to ensure mental health services and interventions are aligned to need.
- Enact greater focus on the full MDD spectrum, including TRD, during the next government's planning cycles. Design the future care system pathways and coverage models accordingly.
- Don't overlook the wider ecosystem of support networks. Seek to enforce standards and benefits for key players such as employers, families, and other caregiver communities.
- Get ready for novel medical interventions coming - continue leadership role as a place for advanced clinical trials, early access, and reimbursement of leading-edge therapeutics.

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Appendix 2: glossary

Asia-Pacific	Inclusive of East Asia, South Asia, Southeast Asia, and Oceania
LMICs	Low- and middle-income countries, as per WHO and World Bank
PPPs	Public-Private Partnerships, key for economically viable health reform
CoE	Center of Excellence, shared utility for leadership and best practices
Depression	Feelings of severe despondency and dejection
MDD	Major Depressive Disorder, persistent feelings of depressive symptoms
TRD	Treatment-Resistant Depression, after unsuccessful MDD intervention
First, second line	Cadence of treatment regimen including therapy switch, augmentation
ICD	International Classification of Disease, a WHO diagnostic tool
DSM-5	Diagnostic and Statistical Manuel of Mental Disorders
EAP	Employee Assistance Program, for physical and mental well-being
CBT	Cognitive Behavioral Therapy, a psycho-social intervention
SSRI	Selective Serotonin Reuptake Inhibitor, or antidepressant medication
ECT	Electro Convulsive Therapy, also known as electroshock therapy
DALYs	Disability-Adjusted Life Years, WHO measurement of disease burden
Absenteeism	Deliberate or habitual absence from work or school
Presenteeism	Lacking productivity, focus at work due to unhealthy body and mind
NHI	National Health Insurance, protecting a society against medical costs
OPE	Out-of-Pocket Expenditures, residual burden to individuals after NHI
Co-Pay	Predetermined OPE price to be paid for medical products/services

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