



Invest now, save later

The economics of promotion, prevention
and early intervention in mental health

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Acronyms

ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
ANZSIC	Australian and New Zealand Standard Industrial Classification
DALY	Disability-adjusted life year
GDP	Gross Domestic Product
HILDA	Household, Income and Labour Dynamics in Australia Survey
ICER	Incremental cost-effective ratios
IGR	Intergenerational Report
NMHC	National Mental Health Commission
OECD	Organisation for Economic Co-operation and Development
PPEI	Promotion, prevention and early intervention
QALY	Quality-adjusted life year
ROI	Return on investment
SME	Small and medium enterprise
WHO	World Health Organization

Executive summary

The economic and social impacts of mental illnesses are wide-ranging, persistent and large. For these reasons, mental health is relevant to all Australians, irrespective of whether illness directly affects them or their families at any one time. Indeed, the overall disease burden of mental illness now ranks third behind cancer and cardiovascular disease.

From a fiscal perspective, meeting the costs of mental illness and other healthcare needs represents a significant policy challenge. Health expenditures already comprise around 9.5% of the national economy and this is expected to rise further over the medium to long term. In addition to these direct costs, a mental illness reduces the likelihood of an individual completing school, securing meaningful employment and achieving a good quality of life.

Preventative health measures have a core role in helping to moderate and contain these economic costs, while promoting community health and wellbeing. Promotion, prevention and early intervention (PPEI) activities in mental health can provide effective means of support. This report focusses on the economic case for prevention and intervention strategies as this is where the evidence base is strongest. However, it is not unreasonable to conclude that, when a greater evidence base becomes available for promotion, the economic outcomes would not be dissimilar. For this reason the term PPEI is used throughout this report when speaking to the overarching framework.

It shows that certain PPEI measures can be particularly effective as a way to promote and protect community health by targeting interventions before full-scale treatments for illnesses are required.

The evidence on mental health PPEI effectiveness

PPEI strategies typically involve upfront and often substantial outlays which target health or other issues before they can manifest into more serious and expensive problems. The evidence on mental health early stage initiatives shows the breadth of prospective opportunities available for targeted intervention and the extent to which, if health issues are not addressed early enough or circumvented, costs to individuals and society can be amplified. Some key areas where mental health PPEI interventions have been shown to be particularly effective include:

- children's education
- support for children and promoting a healthy start in life
- workplace interventions
- early identification for psychosis
- interventions for older people.

An economic framework for considering PPEI options

An economic policy framework for considering and guiding mental health initiatives which focus on prevention and early intervention is proposed in this paper. The framework, which recognises the economic costs of mental illness and the attendant benefits of addressing those costs, has three core objectives:

- **Reduce long term healthcare and social service costs**

Federal and state governments are facing enormous fiscal pressures which are unlikely to moderate for some time. A major structural pressure on budgets involves healthcare expenditures and how these are set to intensify as the population ages. In the context of such constraints, healthcare and social service expenditures are likely to be subject to greater scrutiny. An important factor is that this can place additional pressure on more modest, discrete health programs (such as many PPEI initiatives), which may be considered more 'discretionary' than larger and more entrenched policy platforms.

That said, the fiscal arguments for mental health PPEI are strong — especially in its most prospective areas such as early interventions aimed at children and at-risk adolescents. However, these need to be cognisant of competing priorities for government spending and ensuring the efficient allocation of resources.

Funding efficiency is not necessarily about spending less money, either now or into the future. In effect, the economic arguments for PPEI interventions arise from three scenarios: from spending the same as previously, but achieving a better outcome (*re-prioritisation*); from spending less and achieving the same outcome (*cost rationalisation*); and finally from spending more and getting a better outcome, such as longer term offsetting cost reductions in other areas, which justifies the additional direct expenditures (*enhanced investment*).

- **Promote deeper and persistent engagement in the labour market**

Policies on the supply side have more recently become a sharper focus for governments. This has involved, among other things, measures to improve the quantity and quality of the supply of labour available in the economy. In effect, an expansion in labour supply increases the productive potential of an economy, and increased quality improves the productivity of workers.

A central plank of COAG's human capital agenda focuses on individuals and their potential to contribute to workforce participation and productivity. In doing so, this aims to provide Australians with the opportunities and choices to lead more active and fulfilling lives. This is a vital aspect because it acknowledges that what is good for the economy from a supply-side perspective is also critical to an individual's health.

- **Address longer term population risk factors**

The potential for proactive mental health measures to address longer term population risk factors is a crucial determinant of their overall effectiveness.

A range of environmental factors have been identified as clear and present risks for mental illness. These include unstable formative environments for children, low educational completion, homelessness, drug use, poverty and exposure to violence. These issues, which span a variety of portfolio responsibilities, are each worthy policy priorities in their own right and are the target of different government programs at both federal and state levels.

PPEI options should also reflect changes in Australia's social and demographic profile. Such 'structural' issues include the ageing of the population, changes in settlement and household formation patterns, and the level and composition of the migrant intake.

The above objectives represent specific factors which will influence how Australia can achieve its economic potential in the years ahead. However, it should be noted that its conceptual basis encapsulates broader social considerations. Fundamentally, our long term prosperity will be largely governed by the health and happiness of the community, how economic opportunities are distributed (including over time), and levels of social cohesion. PPEI initiatives have a role in all these areas.

Potential envelope of benefits of PPEI investments

An analysis of the potential economic benefits available from various short and longer term prevention and early intervention options has been undertaken. Two key channels have been examined: the direct fiscal consequences from healthcare, social services and justice system expenditures; and the economic impacts from improvements in labour market engagement.

The modelling indicates that these initiatives have the potential to generate substantial economic gains over the long term.

Projected benefits are estimated to raise output by around \$53.4 billion over the 25 years to 2040, where rates of mental illness decrease by 7% by 2030. Where comparatively larger reductions in the prevalence of mental illness could be achieved, involving community wide reductions of around 10%, potential economic gains could be around \$75.2 billion over the same period.

The largest potential economic gains arise through higher labour force participation and worker productivity, which together comprise about 75% of the estimated economic benefits. Over the period to 2040 these gains could be in the order of \$22-31 billion and \$18-25 billion respectively.

The specific details of the constituent measures are not examined individually within the analytical framework, but rather they are considered as a 'package' of mental health reforms. This effectively shows what gains could realistically be available with a concerted emphasis on mental health initiatives over and above the existing platform of measures.

These 'gross' estimates showcase what level of program and implementation costs — which may indeed be sizeable — could be invested within the available payoff envelope. Simply, the larger the realistic economic gains from better and more effectively managed mental health, the more the up-front investments to realise such gains can be made in an economically justifiable sense. And should these investments be more effective, the potential yields could well be larger in both scale and scope.

To illustrate this issue, the long term benefits potentially available under the medium case scenario (\$53.4 billion on a present value basis) could be achieved with an additional ongoing investment of around \$600 million per year in real terms. This would require that measures, on average, achieve a return on investment (ROI) of approximately 4.9 to 1 — a return which many specific prevention and early intervention mental health programs have been evaluated as exceeding. The magnitude of such an investment represents around \$25 per Australian annually.

Policy implications

A major policy lesson emerging from the literature is that many mental illnesses can be treated and managed effectively. As such, much of the burden caused by mental illness can potentially be averted with best-practice treatment.

For future policy formulation, this has a range of implications:

- To fully embed PPEI approaches as a means of improving mental health outcomes across the community, a range of policy and supports much wider than health services are needed. Partly because of the social and economic costs involved, this is being increasingly reflected in policy priorities. While this has been a welcome improvement over the last decade or so, much more can be done.
- Because of the number of 'moving parts', policy development across a diversity of settings with the potential to intersect with and support positive mental health outcomes has really only touched the surface. As highlighted by the different programs explored in Australia and abroad, there is considerable untapped potential to devise new methods and approaches to drive tangible improvements in mental health — perhaps even in ways not yet envisaged.
- Building on the notion of exploring prospective areas for preventing mental illness and intervening early, there is considerable scope to build public and policy-specific recognition of the role of PPEI measures to enhance human capital. The indirect costs of mental illness such as lost productivity are sizeable, with better health overall being shown to have a positive effect on labour market engagement. It is also the case that many people with mental illness are younger Australians — individuals at prime working, developmental and earning stages of their life. This highlights how intervention in the early stages of mental illness can generate key advantages in driving human capital at an individual and community-wide level.

For policymakers, determining whether specific actions across the spectrum of PPEI initiatives truly represent cost-effective options for improving mental health, especially in relation to the treatment of specific illnesses, is a central issue. While systematic evaluations are deeply entrenched in a clinical sense, they need to be considered in terms of their economic payoffs and whole-of-life benefits as well.

Indeed, a major shortcoming of governments has been in generating the data needed to evaluate their own programs thoroughly and objectively, and to inform ongoing policy improvement. This is an area where additional attention would be valuable, especially given the cross-agency issues for many mental health programs.

Some areas where this would be particularly useful include the following:

- Establishing consistent ROI benchmarks for PPEI programs in Australian settings

As program evaluations typically involve long timeframes and a highly diverse range of social impacts, different evaluation approaches can deliver widely varying outcomes. Instilling consistent principles for technical aspects of assessments and realistic breakeven thresholds would help support a strong evaluation culture, as well as build confidence in investing public resources in programs where benefits often accrue well into the future.

- Developing and assessing how workplace interventions could be structured for workers in mobile industries

Workplaces can provide ideal settings to identify mental health issues and deliver promotion and early intervention-based activities. However, changing patterns of employment, together with more 'dynamic' career paths, can reduce access to the mental health supports often available in larger institutional environments. Further research on practical workplace interventions in industries where workers tend to be highly mobile would fill some crucial information gaps.

- Establishing how changes to aspects of the social safety net impact on mental health outcomes

Australia's system of social services is regularly modified in response to changing fiscal and policy imperatives. Some people with early stage or less severe mental illnesses may find themselves at the margins of entitlement when systems are changed. Determining how potential or actual changes to the social services system impact on mental health outcomes would help inform policymakers on all consequences of reforms (especially where these may be unintended) and help guide design considerations going forward.

1 Introduction

Australia, like many developed countries, is increasingly recognising the role of good mental health in promoting community wellbeing and the need to put in place structured and evidence-based strategies to address mental illnesses and their underlying risk factors.

Much of the attention on mental health has centred on its role in making people healthier and happier and its attendant implications for economic performance and the nation's human capital. A healthy and motivated population is vital for workforce productivity and participation, factors which greatly impinge on Australia's future standards of living.

A major element in mental health policy in recent years has been around raising public awareness and de-stigmatising mental illness. This has been an enormously positive development but much work remains to fully shift attitudes.

At the core improving awareness and acceptance is a recognition that population health can be promoted and protected by investments and actions which occur at stages before full-scale treatments for illnesses are required. These are often categorised as promotion, prevention and early intervention (PPEI) activities, and they encompass a wide spectrum of approaches:

- Mental health **promotion** is about improving wellbeing for people, regardless of whether they are currently well or ill. It is predominately about optimising people's mental health by developing environments that are positive, supportive and informed — that is, good for everyone. These often involve initiatives not directly related to health or mental health priorities, such as in housing and education, but which nonetheless can make important contributions.
- **Prevention** interventions work by focusing on reducing risk factors and enhancing protective factors associated with mental illness. There are three major forms of prevention activities (primary, secondary and tertiary) which essentially target the onset, development and entrenchment of conditions.
- **Early intervention** comprises interventions that specifically target people displaying the early signs and symptoms of a mental health problem.

For policymakers, determining whether specific PPEI actions across this spectrum truly represent cost-effective options for improving mental health, especially in relation to the treatment of specific illnesses, is a central issue.

This report focusses on the economic case for prevention and intervention strategies as this is where the evidence base is strongest. However, it is not unreasonable to conclude that, when a greater evidence base becomes available for promotion, the economic outcomes would not be dissimilar. For this reason the term PPEI is used throughout this report when speaking to the overarching framework.

This paper examines aspects of the economic case for mental health PPEI. The merits of PPEI approaches will be driven by issues such as the strength of the clinical evidence base supporting preventative activities, the scope for delaying or reducing future healthcare expenditures, and how they can limit the wider costs of impaired health to society (for example, those which relate to poorer levels of education attainment or reduced labour force engagement).

These issues are typically complex and much depends on specific measures. Some interventions can be clearly targeted to vulnerable and 'at risk' groups and others take a more generalised scope. Some initiatives take many decades to deliver tangible results (if at all), while others can be cost-effective over much shorter timeframes. Particular illnesses can involve more substantial economic costs, both directly and indirectly, and therefore represent higher impact targets for earlier intervention.

In relation to these issues, a major objective of this study is to highlight those areas where the economic payoffs from earlier intervention in mental health appear most prospective, and thus where greater policy attention is needed — both within and beyond the health system.

REPORT STRUCTURE

This report is structured in the following chapters. **Chapter Two** discusses the economics of mental health PPEI. Mental illnesses are more prevalent and lead to a range of financial, economic and social costs than is often recognised. A major aspect involves how mental illnesses diminish workplace productivity and engagement, and thus impose long term costs for individuals and the community. The extent to which these costs can be potentially reduced through PPEI-related initiatives, and their inherent limitations, is subsequently examined.

Building on this discussion, **Chapter Three** proposes an economic framework for considering and guiding mental health PPEI options, based on analysis of the evidence base for prevention and early intervention initiatives. The framework brings together various elements of the fiscal and human capital implications of mental illness and highlights where economic benefits appear most prospective, reflecting the existing evidence base.

Chapter Four sets out an indicative economic analysis which showcases, under various scenarios, how various short and longer term prevention and early intervention options have the potential to improve economic outcomes going forward.

Finally, **Chapter Five** discusses the implications for Australia's mental health PPEI policy program. It provides a guide for future research attention and concludes how PPEI initiatives can complement a broader health and economic policy agenda.

2 The economics of mental health PPEI

The scale of mental illness and its associated costs to the community are significant (OECD 2012, AIHW 2012). It is on the basis of these costs that mental health warrants major public health and broader policy focus.

This chapter discusses the economic 'context' around mental health. Fundamentally, how are the costs associated with mental illness incurred, and what is the scope for moderating these costs going forward by adopting preventative and earlier intervention approaches.

2.1 A SNAPSHOT OF MENTAL ILLNESS

Mental illnesses are very common in Australia, as in most parts of the world. About one in five Australians aged 16-85 experience anxiety, affective and/or substance use disorders over a 12 month period (ABS, 2007).

While this gives an impression of the rate at which mental illnesses arise across the largest part of the community, it is not a complete picture. It excludes low prevalence conditions such as severe personality disorders and eating disorders which by some estimates may affect another 2-3% of the community (Andrews et al. 2001). Further, it does not account for mental health issues facing children and adolescents. Both of these factors increase the total prevalence of mental illnesses in the community.

Altogether, poor mental health is a significant issue across the whole population, with around 45% of people experiencing a mental illness over their lifetime (AIHW 2013). At current population levels this means mental illness affects approximately 10.4 million Australians at some point in their life.

Some key features of mental illness in Australia include:

- The prevalence of mental illness is highest among younger people (16-24 years) and gradually reduces by age. It is most prevalent when people are in their prime working ages, which has key implications for labour market participation and productivity.
- Mental illness is characterised by high rates of comorbidity, where two or more mental illnesses or a physical illness occur together. Comorbidity, which is especially common with advancing age, has major implications for the identification, treatment and costs of mental illness.
- Causal factors for mental illness are tremendously complex, and in many cases have not yet been fully understood. However, there are strong associations between mental illness and various forms of economic and social disadvantage. For instance, mental illness rates for those who have ever been homeless or incarcerated are more than twice the national average (ABS 2007).
- The profile of mental illness, and its cost implications, show consistent patterns across developed economies. Mental health is a global public health issue.

A profile of mental illness in Australia is provided in Appendix A.

2.2 MENTAL HEALTH PPEI: BENEFITS AND COSTS

The scale of costs associated with mental illness is significant and far-reaching.

Mental illnesses are the leading cause of the non-fatal disease burden.

National Mental Health Commission, 2012

Mental illnesses impose substantial costs on individuals, families, workplaces and the community more broadly, as highlighted by numerous international and Australian studies (Boland 2012; Woolf et al. 2009). A mental illness reduces the likelihood of an individual completing school, securing meaningful employment and achieving a good quality of life.

A number of long-term studies also indicate that untreated mental health and behavioural problems in childhood, in particular, have profound longstanding social and economic consequences in adulthood. These include increased contact with the criminal justice system, reduced levels of employment and often lower remuneration levels when employed, homelessness and personal relationship difficulties (Chen et al. 2006; McCrone et al. 2005; Scott et al. 2001).

The costs of mental illness thus fall in many different areas and span much wider than the direct costs to government from delivering public healthcare. For instance, the total economic impact of depression tends to be dominated by the cost of lost productivity, effectively because so many people with depression experience absence from work, premature retirement or long-term unemployment.

Against the backdrop of ongoing fiscal pressures, initiatives to moderate and contain health expenditures and other forms of social support, while promoting community health and wellbeing, will be essential. Preventative health measures have a core role to play.

It should be noted that the concepts of promotion, prevention and early-intervention (PPEI) are captured within this broader construct. Fundamentally, mental health PPEI initiatives are about preventing the onset of a mental illness and, in the case of early-intervention, about preventing the most severe symptoms from emerging. In this way they minimise the impact of mental illness, recognising that some mental illnesses and their symptoms cannot always be completely avoided.

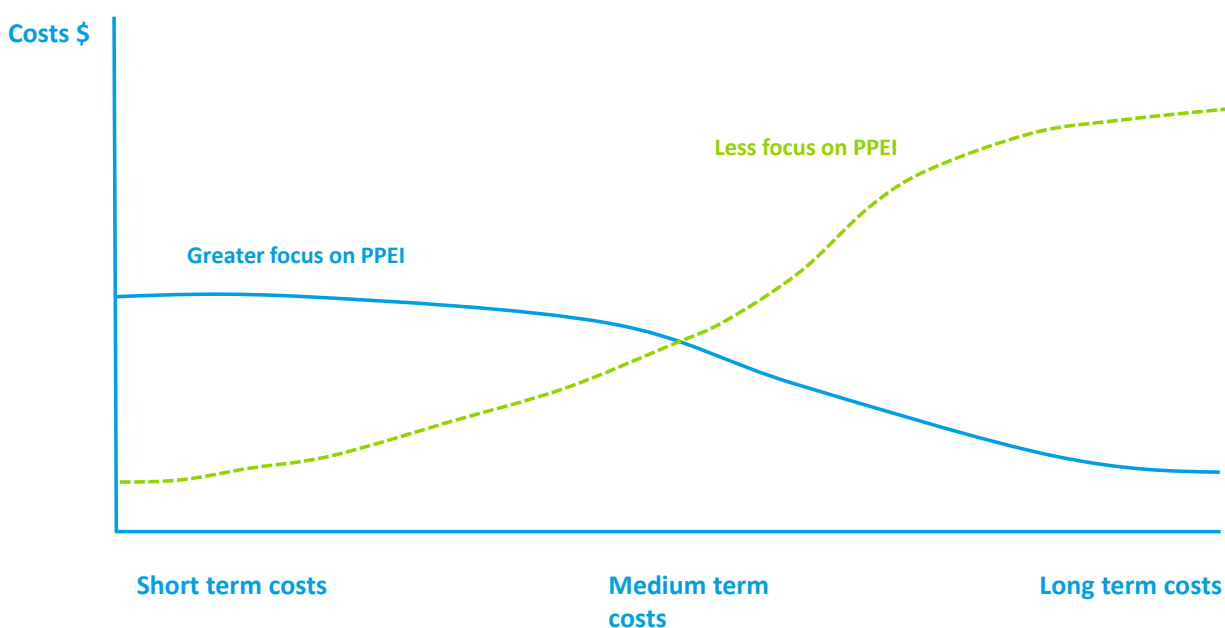
WHY PREVENTION AND EARLY INTERVENTION MATTERS

It is highly intuitive, from both a personal and public policy perspective, to recognise the health benefits from preventing illness and intervening early, rather than treating it at a more advanced stage. Indeed, prevention has brought major gains in health and life expectancy over the last two centuries.

Typically, arguments for health prevention initiatives centre on their potential to improve health and provide a means to control expenditure — particularly in avoiding the largest expenditures for addressing serious illness. In this sense they ‘front load’ health expenditures and involve a longer period before beneficial effects become evident.

A stylised representation of the direct cost profiles of two healthcare programs — one involving a higher emphasis on PPEI spending and the other on treatment-focused interventions — is shown in Figure 2.1 below. This illustrates how PPEI measures have the potential to help moderate longer term healthcare costs compared with more intensive disease treatment programs.

FIGURE 2.1: A STYLISED COST PROFILE OF TREATMENT AND PPEI-FOCUSED INTERVENTIONS



There are however some inherent complications with prevention measures, whether these are aimed at driving reductions in the prevalence and severity of mental illness or other diseases.

Medical science can identify only those at risk of a certain disease (or a cluster of diseases), rather than predict those who will develop that disease. This former group is larger than those who would someday be candidates for specific medical treatments.

- Prevention measures must be delivered to all people at risk (often repeatedly) to prevent a smaller subset from developing disease. Depending on the actual prevention program, this can be resource intensive and costly.
- Furthermore, preventions are never fully effective. Some people will develop an illness despite preventative actions, while others will not develop a condition at all even in the complete absence of any prevention. In essence, an entire pool of people must receive prevention, but not all will individually experience respective benefits.

That said, the extent to which these issues impose major cost disadvantages compared with alternatives is highly dependent on the specifics of programs. As discussed in Chapter 3, program and treatment enhancements and advancements in medical science are continually improving the way in which preventative based initiatives can be targeted to higher risk cohorts and delivered in a cost-effective manner (say by tailoring the frequency and form of intervention).

In all cases, the options need to be assessed according to appropriate cost-benefit analyses — for example, to assess whether the benefits of preventative care are greater than the avoided costs of treatment and acute service provision.

A SPECTRUM OF INTERVENTION OPTIONS

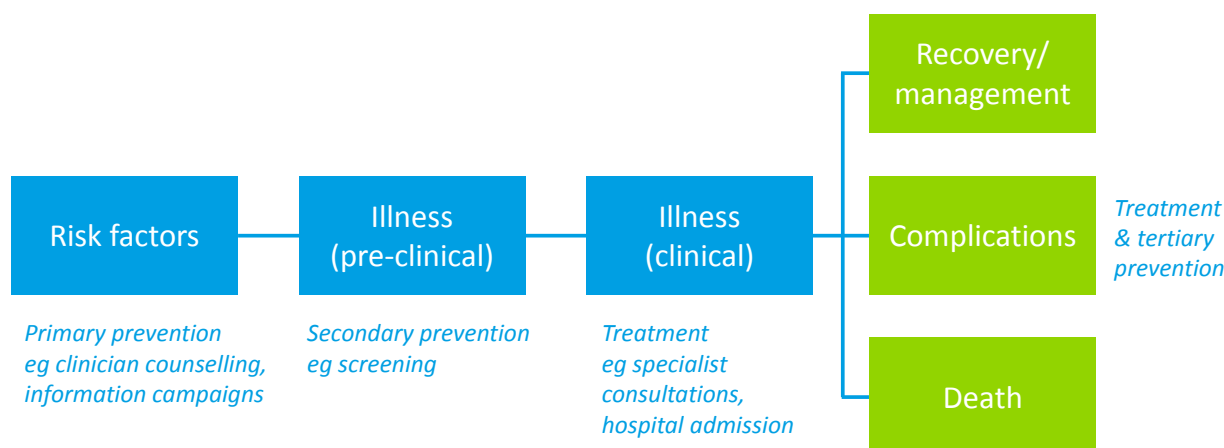
Mental health promotion, prevention and early intervention focus on modifying and reducing risk factors that influence the development or progression of a chronic health condition. Risk factors can be broadly grouped into three categories: behavioural risk factors (including poor diet and nutrition, physical inactivity, risky alcohol use, smoking); social risk factors (such as economic circumstances, discrimination, social engagement); and biomedical risk factors (including excess weight, high cholesterol, and high blood pressure).

There are a number of different aspects to these measures:

- **Primary prevention** — Essentially aims at promoting healthy lifestyles and reducing the key risk factors contributing to chronic illness (for example, public health awareness campaigns on the signs, supports and treatment options for mental illness, and encouraging exercise and work life balance).
- **Secondary prevention** — Targets early detection and intervention, as well as more effective precautionary treatment of chronic disease (for example, screening for various forms of mental illness; child and maternal health checks). Secondary measures may lower the rate of established mental illness in the community.
- **Tertiary prevention** — Focuses on treatment of established conditions to improve or maintain functional status and to minimise the impacts of mental illness symptoms (for example, using antipsychotic treatments for people in early stages of psychoses, and cognitive behaviour therapies).

Prevention and mental health promotion interventions occur across a risk reduction continuum. They can be undertaken by individuals, the healthcare system, or via community programs. Figure 2.2 below shows the interaction between chronic disease and the healthcare system and the various channels in which PPEI measures can be directed.

FIGURE 2.2: INTERACTIONS BETWEEN CHRONIC ILLNESS AND THE HEALTHCARE SYSTEM



2.3 THE ECONOMIC IMPACTS OF MENTAL ILLNESS

Mental health is an integral part of healthy living, greater productivity and better quality of life. Mental health is also important for businesses through its impact on financial performance via workforce wellbeing and subsequent productivity. Workers across all industries experience personal and family problems that affect their health, satisfaction and productivity. As such, mental health concerns affect all employing enterprises, including large and small companies and people who are self-employed.

In an economic context, mental illness is increasingly being recognised as a challenge for social and labour market policy. This is an issue which is creating significant costs for individuals and families, employers and the economy more broadly by lowering employment, raising unemployment and underemployment, and eroding productivity.

From this perspective, mental illness is an economic problem, plain and simple. Specialist mental health services directly cost Australians around \$6.9 billion annually — or 4.5% of national healthcare spending (AIHW 2013). There are also much higher estimates, with total direct expenditures for supporting people with mental health estimated to be around \$13.8 billion (Medibank and Nous Group 2013).

EFFECT OF MENTAL ILLNESS ON WORKFORCE PARTICIPATION AND PRODUCTIVITY

Mental illness can have a significant impact on an individual's ability to participate in the workforce — although it should be noted that the majority of people with a mental illness are employed. Challenges can be exacerbated by the comorbidity of mental illness and other physical conditions, with the result that many people who would otherwise be in the labour force find themselves unable to participate due to their condition. This not only creates lost potential within the workforce, but increases income support payments, with a considerable number of people with mental illness receiving the disability support pension.

Looking in detail, of the close to 800,000 Australians receiving disability support pensions (DSP), 29% have a psychiatric or psychological condition as their primary disability. The cost of mental illness related pensions is around \$3.4 billion per annum (Productivity Commission 2011).¹ While this group comprises only a small proportion (in the order of 5%) of the total number of Australians with a mental illness, the scale of the direct financial costs represents an obvious area of concern for policymakers and the broader community.

¹ Since this report was drafted, the National Mental Health Commission released analysis showing that payments related to mental illness in 2012-13 were \$4.7 billion for Disability Support Pension and \$1.0 billion for Carer Payment and Allowance (National Mental Health Commission, 2014: The National Review of Mental Health Programmes and Services. Sydney: NMHC, Volume 1, page 22)

Mental illness increases the likelihood of unemployment (those who are looking for work but not employed) and non-participation in the labour force (those not employed and not looking for work). This effect increases with the relative severity of forms of mental illness, and increases with the relative severity of the work restrictions caused by the mental illness. Other factors such as age, sex, partner status, and educational attainment are also relevant (see Laplagne et al. 2007).

There is a higher chance of people with mental illness also having a physical illness. This comorbidity is particularly pronounced for those not in the labour force, where people with a mental illness are 70% more likely to have other chronic health issues (AIHW 2011).

At an individual level, mental illness can disrupt education, school to work transitions, employment, higher education and vocational training, and pathways to a career — both directly and indirectly. The direct effects are due to the impact of the illness (and side effects of medications) on individuals. Indirect effects are associated with negative attitudes within the community, including employers (both current and prospective) and service providers, which can diminish self-esteem and work-related self-efficacy.

The scope for reducing the incidence of disease and improving workforce participation and productivity varies by health condition — whether this is a form of mental illness or other diseases. As such, most of the evidence on the effectiveness of promotion and prevention focuses on specific conditions or diseases (see Chapter 3).

ASSESSING THE COST EFFECTIVENESS OF HEALTH INTERVENTIONS

As discussed above, it is important to understand the economic case behind preventative and other health interventions. This is not just in the areas of mental health, but in the wider realm of health generally.

A range of conceptual factors have a bearing in terms of assessing the relative economic merits of prevention and early intervention focused initiatives:

- Foremost, preventing and circumventing illness has a value in human terms which is not fully captured in empirical assessments. If prevention and treatment incur the same cost (in terms of their cost effectiveness or the overall 'health' purchased over time), people would rationally prefer prevention as it avoids the actual ordeal of the illness.
- Prevention and early intervention measures often involve less tangible payoffs such as economic gains from higher workforce productivity and participation (as discussed above) and broader social benefits associated with improved health. Crucially, such aspects can be difficult to quantify and the extended timeframes in which benefits tend to materialise makes attributions to specific interventions less precise.
- Finally, the timeframe and attribution challenges inherent in preventative and early intervention initiatives have a flip side. They highlight the opportunities for 'compounding' health benefits. Essentially this involves the process in which the benefits associated with a reduction in a specific risk factor for mental illness or another disease are amplified across other conditions, reflecting the interrelationship of different forms of illness (ie comorbidities). An important aspect is that these opportunities may expand with increased life expectancy — that is, as people live longer, prevention focused health investments have the potential to lock in ever greater gains.

With such issues in mind, while preventative treatments often intuitively appear less costly for tackling a wide range of health issues, this is not always the case.

Many preventative treatments across a broad spectrum of health issues are more cost effective than the alternatives, but this does not mean they are necessarily cost saving. For example, a US study that included analysis of treatments for a spectrum of chronic diseases including diabetes and hypertension found that an overwhelming majority of the preventative treatments assessed added more to medical costs than they saved, with less than 20% being cost saving (Russell 2009). This suggests that preventative treatments (both clinical and other forms of prevention-focused treatments) may not be the best option in all cases, but that careful targeting of initiatives can help improve outcomes from both a community health and financial perspective, especially when broader impacts are considered (see Chapter 4).

Similar cautions have been reinforced in Australian settings. Dalziel et al. (2008) examined a range of analyses across all fields of health to assess the most cost effective treatments. The review concluded that treatment interventions were often more cost effective than preventative interventions. Of these, the most cost effective involved allied health, lifestyle and in-patient treatments. Based on published economic evaluations, mental health disorders were on average the least cost effective to treat (in terms of their cost per quality-adjusted life-year² (QALY) gained). However, the authors note that there was substantial variation in the cost effectiveness of individual interventions within and across all categories. Again, this underscores a need for investment in improving mental illness treatments and early intervention options to improve efficiency and effectiveness, as well as in research and evaluation frameworks to help inform such investments.

To make preventative treatments more cost effective, there needs to be a strong focus on the way these are targeted. This will often involve improvements in screening and diagnostic techniques. In a broader healthcare context, Russell (2009) suggests that effective screening must be able to achieve two things. Firstly, detection of the condition must occur before symptoms appear. Secondly, once detected, treatments must be more effective when early intervention occurs. These cost-effectiveness and targeting issues are discussed in more detail below.

An important emphasis is that these qualifications do not detract from the potential for preventative interventions to improve mental health outcomes — indeed, the evidence points to tremendous opportunities here. Rather, the points made above are about countering a ‘more is always better’ viewpoint, under which inherent economic trade-offs are not sufficiently recognised.

It is the case that any particular measure will have a different (whether higher or lower) potential and realised effectiveness than others. And expenditure in one area typically means less funding is available for other programs, whether in healthcare, social services or for tackling other priorities.

Understanding such issues and cherry picking from the suite of available options, with the aim of boosting efforts where the payoffs are likely to be greatest and avoiding those where the potential is more tenuous, explicitly recognises the trade-offs in allocating scarce public resources.

In this regard, it is important to acknowledge that the overall impact of measures to prevent and intervene early in mental illness readily extend beyond the health system. In order to fully evaluate options, analyses should therefore account for wider impacts such as the costs of services provided in housing, income support and other social sectors, as well as to workplace productivity. How these economic factors can be incorporated into relevant policy and program deliberations is discussed in the next chapter.

² A quality-adjusted life-year is a measure of disease burden that factors in both quality and quantity of life lived. A year of perfect health is assigned a value of 1.0, while death is assigned 0.0, Living an extra year of life under a disease burden will add somewhere between 0.0 and 1.0 QALYs.

3 An economic framework for guiding mental health PPEI investments

Drawing on the available evidence, this chapter sets out an economic framework for considering mental health PPEI investments within a public policy perspective. The framework aims to bring together different ways of thinking about how mental health PPEI can advance community wellbeing and promote economic performance over the longer term.

Although the evidence base for promotion initiatives was limited, it is reasonable to expect a similar range of outcomes across the PPEI spectrum. Urbis has therefore assessed an overarching framework incorporating this spectrum, but reliant on the evidence centred on prevention and early intervention.

A particular focus of the framework are the human capital implications for mental health PPEI, noting that the prevalence of mental illnesses is especially high among young Australians. Building the nation's human capital has obvious benefits for governments which are operating in a straitened fiscal environment, and are likely to be for the foreseeable future, and are keen to drive productivity gains throughout the economy.

The challenge of linking economic outcomes to mental health PPEI is complicated by a range of issues. These include the wide spectrum of mental illnesses (see Appendix A), the variety of possible interventions (some of which may be primarily unrelated to health) and linkages between mental illness and other health conditions.

This framework attempts to encapsulate these linkages and highlight where there are critical pathways to improving mental health.

3.1 EVIDENCE ON MENTAL HEALTH PPEI EFFECTIVENESS

A review of the evidence of the effectiveness of mental health PPEI initiatives was undertaken to inform the economic framework. The review adopted a cross sector approach, given the breadth of PPEI interventions and their settings, and had a policy/economic rather than clinical focus for inclusion. That is, it centred on areas where public policy matters — for example, in terms of direct provision or support for PPEI interventions — were most prominent.

The review aimed to provide a broad based synthesis of current research in, or relevant to, an Australian context in order to highlight where PPEI options demonstrated specific potential.

The literature review uncovered evidence centred on prevention and early intervention initiatives, but a very limited evidence base for promotion.

The review was not conducted using an approach (often referred to as systematic or meta-analysis) which examined all primary studies relevant to a particular question using defined search strategies.

CLINICAL UNDERPINNINGS

In the face of evidence on the community-wide costs of mental illness, there is substantial potential economic gain to be made from optimising the prevention and treatment of mental ill health across the population.

Crucially, however, it is not just the pervasive and rippled cost effects from mental illness which are important but the clinical efficacy of intervention. In this regard, the potential of optimal PPEI-based treatments to reduce the disease burden of mental illness has been estimated:

- For mental illnesses, on average, it has been estimated that the current disease burden can be halved by applying appropriate treatments (Hickie et al. 2004).
- For depression, the estimated increase in the disease burden which can be potentially averted is close to 75% (Andrews et al. 2000; Issakidis et al. 2004; and Vos et al. 2004b).
- For schizophrenia, it is estimated to be about 45% (Andrews et al. 2003).

These estimates are important because they indicate the potential for revised, new and/or additional PPEI measures to reduce the incidence and impacts of mental illness.

A major policy lesson emerging from the literature is that mental illnesses can be treated effectively, involve full recovery, and, in many cases, be prevented. As such, much of the burden caused by mental illness can potentially be averted with best-practice treatment.

EFFECTIVE MENTAL ILLNESS PREVENTION AND EARLY INTERVENTION STRATEGIES

A growing number of Australian and overseas studies have examined the role of prevention and early intervention strategies in improving mental health outcomes for individuals and potentially avoiding the significant cost burden imposed by mental illness.

In a few areas, the evidence base for evaluating mental illness prevention and early intervention measures remains somewhat limited. The delivery and evaluation of workplace based programs and the potential for broader social services to support mental healthcare programs are two particular areas where evidence could be improved.

Encouragingly, however, there appears to have been recent increases in the emphasis of assessing both the costs and consequences of different prevention and early intervention based interventions.

Where economic evaluations have already been completed, the economic case for intervention is generally strong. Some key areas where mental illness prevention and early intervention has been shown to be particularly effective are discussed below.

- Children's education

An area where considerable work has been undertaken relates to children. This builds on the accumulation of evidence that behavioural and emotional problems in childhood can have adverse consequences in adulthood (Scott et al. 2001). These problems can be adequately addressed by mental health services, as well as other social and education services more broadly.

Education itself has also been associated with reduced risk of poor mental health and depression (Chevalier and Feinstein 2006). Because of the high costs of poor mental health, measures to invest in boosting educational attainment in children with low levels of educational performance have the potential to deliver good value for money. Further, these have the ability to secure additional economic dividends as a result of the productivity advantages from higher levels of education.

The role of schooling in the lives of children and young people and the school setting has been identified as a critical environment for influencing positive mental health and reducing risk factors. A range of interventions have been developed for implementation in schools and they range from 'whole-of-school' approaches, to specific classroom programs targeting certain age groups or children at greater risk of poor educational and mental health outcomes.

- Support for children and promoting a healthy start in life

During the early stages of life there is more development in mental, social and physical functioning than in any other periods. What happens from birth to age three has a major influence on how the rest of childhood and adolescence unfolds. Many successful programs addressing risk and protective factors early in life are targeted at child populations at risk, especially from families with low income and education levels.

There is robust evidence suggesting that early years interventions to protect the mental health and wellbeing of children, as well as their parents, can generate substantive positive returns on investment (e.g. Bauer et al, 2014; Knapp & Lemmi, 2014). Indeed, many of the benefits of better mental health and wellbeing in childhood are permanent and long lasting, reaching into adulthood (and perhaps even at an intergenerational level). As such, benefits can extend beyond the health sector, such as within the criminal justice and education systems (Cuijpers et al. 2006; Greenberg et al. 2001).

In some cases, the costs of investment can be recovered within three to four years, with benefits continuing into adulthood. Moreover, it is recognised that improved performance in school increases

an individual's lifetime earning potential, which promotes social engagement and provides attendant benefits in terms of reducing social service costs for government. Low-cost parenting interventions may well prove to be highly cost-effective given these impacts.

At later stages of adolescence, prevention and early intervention initiatives (such as educational support) for young people with psychiatric illness and substance use problems should occur prior to the middle years of high school to help prevent adverse social and economic consequences (Leach and Butterworth 2012).

- Workplace interventions

Aspects of work and workplaces can contribute to mental health problems (for example, burnout, anxiety, depression, sleeplessness) which have flow-on economic costs for healthcare and human services. Mental illness is one of the principal contributors to absenteeism and presenteeism.

Accordingly, there is increased attention on the employment difficulties experienced by people with common mental health problems, including stress and depression. Encouraging greater awareness among employers on their workplace responsibilities for promoting better mental wellbeing and reducing employee stress, and well as the commercial benefits, has also received some focus.

Evidence is growing on the effectiveness of various workplace-based programs, both to promote mental health and deal with some of the early signs of stress and mental illness (Matrix Insight 2012; Cotton and Hart 2003; Van der Klink et al. 2001). This has involved initiatives such as stress management training and coping techniques, relaxation training, and fitness training. Some programs have been assessed as driving material reductions in staff absenteeism (Mills et al. 2007).

It should be noted that much of the evidence in this area is from the United States and involves business-sponsored research. It may not therefore have the same robustness of peer-reviewed assessments. Nonetheless, there are encouraging signs that workplaces are a prime setting in which to target mental illness prevention and early intervention initiatives.

- Early identification for psychosis

Psychosis often occurs for the first time in adolescence or early adulthood. The longer it is untreated, the more the condition impacts on an individual's quality of life and imposes costs related to health, social services, and criminal justice and lost employment. Early detection services aim to identify the initial symptoms of psychosis, reduce the risk of developing full psychosis and shorten the duration for those who do develop it.

There is growing evidence on the effectiveness of programs focussing on the detection and early intervention for more severe mental illnesses, particularly schizophrenia, and depression where it can be a risk factor for other conditions (Cuijpers et al. 2006; Marshall and Rathbone 2006; Neil and Christensen 2007).

There is considerable variation in the strength of the evidence base and in the time period required to achieve a return on prevention and early intervention investments. The most attractive short term actions, in terms of delivering a positive return on investment, include early identification and treatment of psychoses where substantial benefits within a one year timeframe appear possible.

- Interventions for older people

Individuals can be at increased risk of poor mental health as they age. Population ageing will also bring an increase of age-related physical and mental health problems, as well as levels of Alzheimer's disease and other forms of dementia.

Different types of universal and selective interventions have been shown to be effective in improving the mental health of older people. Examples of universal strategies include exercise interventions, social support and befriending programs. Promising preventative interventions for selective and indicated elder populations include the use of patient education methods, early screening, interventions in primary care and programs using life review techniques. Workplace interventions can help extend participation of older people in the workforce (Vasiliadis et al. 2013). It will also be critical

that mental illnesses in older Australians are correctly diagnosed and distinguished from Alzheimer's and dementia in order to ensure appropriate care and support is provided.

More broadly, there is an increasing body of literature that provides (typically short term) evidence on the effectiveness of a range of prevention programs which address known or widely accepted risk factors for mental disorders, such as low social supports, substance abuse and stress (Andrews and Wilkinson 2002; Greenberg et al. 2001; Herrman 2005; Olds et al. 1997; World Health Organization 2004). However, while studies generally show consistently positive impacts for mental illness prevention and early intervention, there are areas with a wide variance of results. Studies in an Australian and more localised context are more limited.

Overall, it remains the case that much of the available evidence based on promotion and prevention is from the United States and to a lesser extent Europe where the context may be quite different. In this regard, some caution must therefore be exercised in generalising the results from these studies.

A summary of specific studies is provided in Appendix B.

3.2 A FRAMEWORK FOR MENTAL HEALTH PPEI INITIATIVES

The evidence on mental health PPEI initiatives shows not only the breadth of prospective opportunities available for targeted intervention but also the extent to which, if mental health issues are not addressed early enough or circumvented, costs to individuals and society can be amplified.

The following framework (see Figure 3.1) sets out how mental health PPEI options can be placed into a public policy context. It highlights how mental health PPEI measures can play a part in supporting and improving community wellbeing and economic performance, and what are the key impact and implementation channels.

The framework provides guidance for considering mental health PPEI strategies, or other public health preventions more broadly, and a consistent basis for understanding their impacts.

PPEI strategies typically involve upfront and often substantial outlays which target health issues before they can manifest into more serious and expensive problems. This inherently involves a number of challenges, as outlined in Chapter 2, namely difficulties in determining where and how precisely to ensure interventions are optimally targeted.

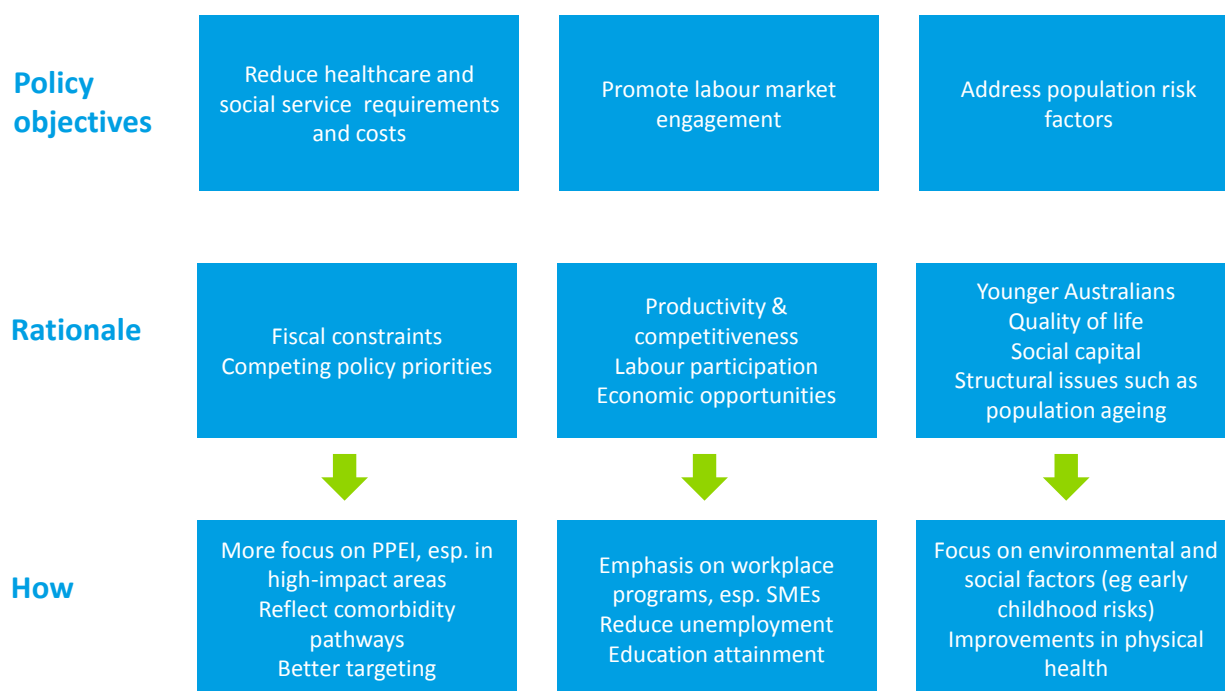
THE OBJECTIVES

So how should mental health PPEI initiatives be considered within an economic policy framework? In our view, there are three fundamental objectives. Measures should explicitly seek to:

- reduce long term healthcare and social service requirements, thereby lowering costs
- promote deeper and persistent engagement in the labour market
- address longer term population risk factors.

These objectives represent specific factors which will influence the likelihood of mental illness and assist Australia to achieve its economic potential in the years ahead. However, it should be noted that its conceptual basis encapsulates broader social considerations. Fundamentally, our long term prosperity will be largely governed by the health and happiness of the community, how economic opportunities are distributed (including over time), and levels of social cohesion. PPEI initiatives have a role in all these areas.

FIGURE 3.1: ECONOMIC FRAMEWORK FOR MENTAL HEALTH PPEI



HEALTHCARE AND SOCIAL SPENDING

Federal and state governments are facing enormous fiscal pressures which are unlikely to moderate for some time. A major structural pressure on the budget involves healthcare expenditures and how these are set to intensify as the population ages.

Currently, health expenses account for around 19% of total Australian government expenditure (state and federal), with significant expenditure increases over the last decade (74% in real terms). This upward trend is predicted to continue at a rate that will place considerable pressure on public finances. For example, under a scenario based on currently legislated policy, Australian Government health expenditure is projected to increase from 4.2% of GDP in 2014-15 to 5.7% of GDP in 2054-55, with real health spending per person more than doubling (IGR 2015).

In the context of such constraints, healthcare and social service expenditures are likely to be subject to greater scrutiny. An important factor is that this can place additional pressure on more modest, discrete health programs (such as many PPEI initiatives), which may be considered more ‘discretionary’ than larger and more entrenched policy platforms.

That said, the fiscal arguments for mental illness prevention and early intervention are strong — especially in its most prospective areas such as early interventions aimed at children and at-risk adolescents. However, these need to be cognisant of competing priorities for government spending and ensuring the efficient allocation of resources.

Funding efficiency is not necessarily about spending less money, either now or into the future. In effect, the economic arguments for PPEI interventions arise from three scenarios: from spending the same as previously, but achieving a better outcome (*re-prioritisation*); from spending less and achieving the same outcome (*cost rationalisation*); and finally from spending more and getting a better outcome, such as longer term offsetting cost reductions in other areas, which justifies the additional direct expenditures (*enhanced investment*).

In some respect, the complexities associated with mental health PPEI, many of which are discussed above, actually help improve its fiscal potential. Because the costs of mental ill health involve much more than simply public health spending, the payoffs to government are potentially large. The key is to ensure that these broader spillovers are integrated into program decisions and coordinated, where necessary, between relevant agencies.

LABOUR MARKET ENGAGEMENT

Policies on the supply side have more recently become a sharper focus for governments. This has involved, among other things, measures to improve the quantity and quality of the supply of labour available for the economy. In effect, an expansion in labour supply increases the productive potential of an economy, and increased quality improves the productivity of workers.

A central plank of COAG's human capital agenda focuses on individuals and their potential to contribute to workforce participation and productivity. In doing so, this aims to provide Australians with the opportunities and choices to lead more active and fulfilling lives. This is a vital aspect because it acknowledges that what is good for the economy from a supply-side perspective is also critical to an individual's health.

Participation rates for people with mental illness are understandably lower than average. However, this points to substantial scope for improvements, especially for the many Australians who have mild to moderate experiences with mental illness.

Many prevention and early intervention initiatives target workforce engagement. This can occur directly, as is the case with specific firm-wide and return-to-work programs, or more indirectly via measures which aim to improve health outcomes for people in prime working age groups.

As a complement to mental health approaches, there is a major role for other policy levers. Ensuring economic opportunities are sufficiently widespread, including opportunities provided through meaningful work, can provide broad-based support for various social outcomes and the nation's mental health. This is particularly the case in rural and regional areas where levels of educational attainment and employment tend to be lower, and social isolation issues more acute.

POPULATION RISK FACTORS

Our understanding of mental illness has come far in the last few decades, but perhaps more than in any other branch of medicine, there remain so many unknowns. While a combination of biological, psychological and social factors comes into play, it is the last element which is most germane to prevention-focused public policy.

Indeed, the potential for PPEI measures to address longer term population risk factors is a crucial determinant of their overall effectiveness.

A range of environmental factors have been identified as clear and present risks for mental illness. These include unstable formative environments for children, low educational completion, homelessness, drug misuse, poverty and exposure to violence. These issues, which span a variety of portfolio responsibilities, are each worthy policy priorities in their own right and are the target of different government programs at both federal and state level.

In many cases, people exposed to such risks are relatively easy to identify. They become ideal candidate groups for specific intervention campaigns given recognition of at-risk groups represents a major barrier to putting in place cost effective PPEI investments.

At a broader level, however, PPEI options should also reflect changes in Australia's social and demographic profile. These 'structural' issues include the ageing of the population, changes in settlement and household formation patterns, and the level and composition of the migrant intake. Societies and economies are ever changing and longer term interventions like many PPEI based initiatives need to closely align with changing healthcare requirements and population risks. Where such risk factors intensify — either in an absolute or relative sense — this can signal where PPEI priorities have the potential to yield significant payoffs to the community.

Mental health policy does not occur in a vacuum. The broader policy context in which specific initiatives must be positioned, as well as contribute, needs to be recognised. The proposed framework aims to help guide considerations around how mental health PPEI initiatives can support a wider economic agenda and guide how priorities can be devised.

4 Indicative economic payoffs from mental health PPEI investments

The economic framework discussed in Chapter 3 centred on various keystone aspects of viewing mental illness prevention and early intervention initiatives. These involved their ability to reduce long term fiscal outlays on healthcare, income support and social services, promote attachment to the labour market through better health and opportunity, and tackling population risk factors.

To illustrate these impacts, a high level analysis of the potential economic benefits available from various short and longer term prevention and early intervention options has been undertaken.

The analysis examines the economic benefits available through reducing the prevalence of mental illness within the community. The gains from lower rates of mental illnesses are estimated via two key channels:

- the direct fiscal consequences from lower healthcare, social services and justice system expenditures
- the positive economic impacts from improvements in labour market engagement.

These factors tend to be interrelated. From a policy perspective this can infer substantial advantages in that positive developments can be reinforcing as they generate improvements via other channels. For example, better health (whether physical or mental) tends to be associated with reduced non-discretionary health spending (ignoring costs associated with longevity) *and* a greater likelihood of employment.

The analysis has incorporated the complementary nature of reduced fiscal outlays and improved labour market outcomes but has required various simplifying assumptions which are discussed at the end of this chapter. It should be viewed as exploratory and a high level indication of the scale of prospective economic gains from mental health PPEI initiatives.

FRAMING THE PPEI SCENARIOS

Under the approach, the specific details of the constituent measures are not examined individually, but rather they are considered as a ‘package’ of PPEI reforms. This effectively shows what gains could realistically be available with a concerted emphasis on mental health PPEI over and above the existing platform of measures.

Economic impacts were estimated under three mental health PPEI envelope scenarios, based on reductions in community wide rates of mental illness. Decreases in the national prevalence of mental illness were taken each year over the period to 2040, as set out in Table 4.1.

TABLE 4.1: PPEI IMPACT SCENARIOS — REDUCTIONS IN MENTAL ILLNESS PREVALENCE

SCENARIO	2015	2020	2025	2030	2035	2040
Low case (Conservative economic benefits)	1.0%	2.0%	3.0%	4.0%	5.0%	6.0%
Medium case (Moderate economic benefits)	1.0%	3.0%	5.0%	7.0%	9.0%	11.0%
High case (More prospective economic benefits)	1.0%	4.0%	7.0%	10.0%	13.0%	16.0%

Note: Reductions in prevalence are taken as decreases in population wide rates of mental illness each year over the period of the analysis. These are applied to a baseline projection of rates of mental illness based on current prevalence patterns and changes to the size and age structure of the population.

Source: Urbis modelling parameters

The literature on mental health PPEI focuses heavily (and not surprisingly) on the merits of particular mental health interventions. As such, there is little direct guidance on how a portfolio of new interventions could moderate the incidence and severity of mental illness in a national context. That said, the literature on specific preventative mental health options is instructive in a few key areas:

- It provides clear evidence that health and community-wide economic gains are cumulative over time, with full health benefits often materialising beyond a period of 10 years (eg Voss et al. 2010).
- It further highlights that the distribution of benefits can also be wide-ranging. In particular, mental illness prevention can have deep and persistent gains on workforce participation and productivity (eg Lim et al. 2000).

Both of these aspects have been integrated in the analysis via the pace and intensity of potential improvements to community health arising from mental health PPEI measures. In each scenario, the rates of population-wide changes in the prevalence of mental illness occur broadly and gradually. There is little differentiation between the scenarios over the short term, with the reduction in prevalence rates becoming more pronounced after a decade or so.

The scenarios were applied to a current baseline of mental illness in Australia. This involved establishing a detailed structure of the prevalence of mental illness in the community (experienced in the past 12 months), decomposed into major categories of mental illness (anxiety disorders, affective disorders and substance use disorders).³ This pattern was projected to 2040, adjusting for changes in the size and age structure of the Australian population using ABS estimates.

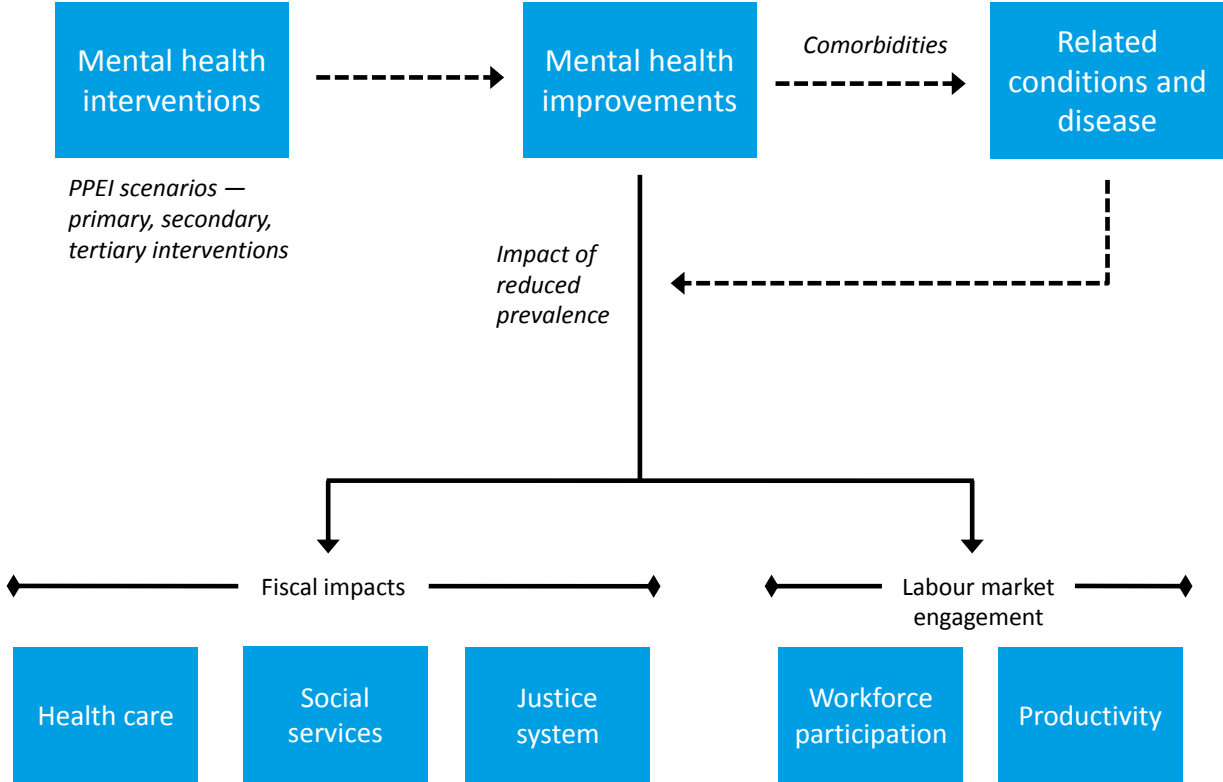
Using this baseline, the reduction in the prevalence of mental illness across the community was evaluated as a financial cost saving and an accompanying gain in productive capacity for each mental illness case avoided.

When successful, mental health PPEI initiatives moderate the severity of conditions as well as their prevalence. While the influence on the impact of conditions has not been explicitly incorporated in the analysis, there are strong links between the rates of mental illness and their severity. Reductions in severity at an aggregate level flow through to lower prevalence levels. For example, as fewer people experience protracted mental health conditions, the number of Australians at any future point in time with a mental illness will also decrease.

The assumed pathways for potential reductions in the prevalence of community wide mental illness over time are considered to be realistic in the context of current (and relatively stable) prevalence patterns and the general scope for cumulative health gains from mental health PPEI measures highlighted in the literature. The general framework for the economic transmission channels is shown in Figure 4.1. Detailed parameters adopted in the analysis are also set out in a companion technical note.

³ Substance use disorders are generally not considered as mental illness. However, comorbidity of mental illness and substance use disorders is very common and these are often presented together to form a complete picture of community wide mental illness (e.g. ABS 2007). Given the clear connections and the commonality of issues involved, this analysis has included both sets of disorders.

FIGURE 4.1: ECONOMIC BENEFITS FROM MENTAL HEALTH PPEI INVESTMENTS



THE POTENTIAL ECONOMIC BENEFITS OF PPEI INVESTMENTS

The high level modelling indicates that PPEI initiatives have the potential to generate substantial economic gains over the long term.

Projected benefits are estimated to raise output by around \$53.4 billion over the 25 years to 2040 on a present value basis under the medium case scenario. For the high scenario, the economic gains could be around \$75.2 billion over the same period — an outcome which would be dependent on achieving comparatively higher rates of mental illness prevention across the community.

Across all scenarios, the largest potential gains arise through higher labour force participation and worker productivity, which together comprise about 75% of the economic benefits. Over the period to 2040 these gains are estimated to have a present value in the order of \$22 billion and \$17.7 billion respectively under the medium case scenario.

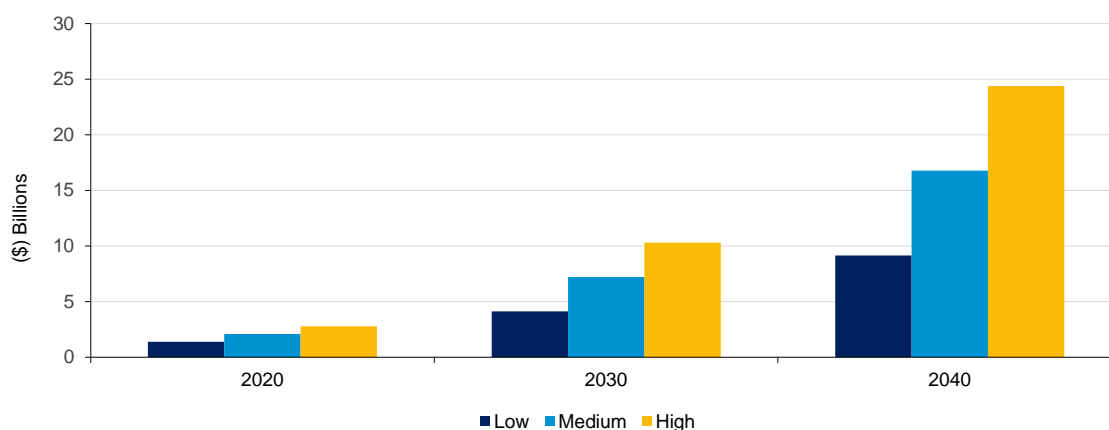
The key estimates of the analysis are set out in Table 4.2 below. A profile of the potential economic gains across the three scenarios at specific near and long-term points in time is shown in Figure 4.2.

TABLE 4.2: POTENTIAL ECONOMIC BENEFITS OF MENTAL HEALTH PPEI INITIATIVES TO 2040

COMPONENT OF ECONOMIC BENEFIT	NPV (\$ BILLION)		
	LOW CASE	MEDIUM CASE	HIGH CASE
Healthcare savings	5.6	9.6	13.5
Social services savings	2.1	3.5	4.9
Justice system savings	0.38	0.6	0.89
Participation	13.1	22.0	30.9
Productivity	10.5	17.7	24.9
Total	31.7	53.4	75.2

Source: Urbis estimates

FIGURE 4.2: POTENTIAL ECONOMIC BENEFITS OF MENTAL HEALTH PPEI INITIATIVES BY SCENARIOS



Source: Urbis estimates

Because of the way preventative health benefits tend to accrue over time — limited gains early on and gradually accumulating over the long term — these scenarios show greater differentiation after 10+ years. In fact, after 2040, the potential economic gains under the high scenario are more than two times that of the low case.

This highlights that even modest improvements made today and continued over time, say in terms of improving the efficacy and targeting of initiatives (and not necessarily the quantum of spending), have the potential to yield major ‘compounding’ gains over time.

That said, these ‘gross’ estimates showcase what level of program and implementation costs — which may indeed be sizeable — could be invested each year within the available payoff envelope. Simply, the larger the realistic economic gains from better mental health, the more the up-front investments to realise such gains can be made in an economically justifiable sense. And should these investments be more effective, the potential yields could well be larger in both scale and scope.

To illustrate this issue, the long term benefits potentially available under the medium case scenario (\$53.4 billion over 25 years on a present value basis) could be achieved with an additional ongoing investment of around \$600 million per year in real terms. This would require that measures, on average, achieve a return on investment (ROI) of approximately 4.9 to 1 — a return which many specific prevention and early intervention mental health programs have been evaluated as exceeding. The magnitude of such an investment represents around \$25 per Australian annually.

That the largest potential economic gains from reducing the prevalence of mental illnesses relate to human capital improvements also has major implications for PPEI focused interventions. In some respects, these impacts highlight the large latent costs of mental illness from exclusion and marginalisation in the workplace, and the subsequent payoffs from improving outcomes in this area. It also highlights that the workplace is a particularly fertile area of intervention — both because of the age profile of working Australians and their sheer numbers. Indeed, the importance of mental health initiatives centred on the workplace is increasingly being recognised both domestically and in the international literature.

LIMITATIONS OF THE ANALYSIS

The links between mental illness, modifiable risk factors and economic costs is complex, and assessments of the potential economic benefits from mental health PPEI initiatives are far from straightforward.

This evaluation has been conducted at a high level and has not involved many of the detailed assessments typically adopted to measure the costs and efficacy of particular interventions. In general, narrower analyses of specific PPEI measures (many of which are noted in this report) can account for more detailed characteristics of target populations and different dimensions of attributable health outcomes, as well as actual program costs. The major analytical limitations are noted in Box 2.

Within the scope of this study, however, this scenario analysis has been constructed to show the benefits from reducing rates of community wide mental illnesses, and thus the potential gains from more investment in mental health PPEI initiatives as a whole, and the effective targeting of long term programs.

It should be noted, however, that the potential *net* gains, and fiscal balances, would of course depend on the magnitude of costs (whether incurred by governments and/or private providers) in implementing specific reform programs. Other things being equal, the greater these costs, the smaller the net economic payoff.

Box 2: Key limitations

- **Linking preventative health measures and health outcomes** — The relationship between mental health PPEI measures and other health outcomes is often not straightforward. In many cases outcomes are dependent on a range of factors and a particular complication of estimating these linkages is that counterfactual estimates of outcomes which would have occurred without a particular intervention are required.
- In terms of this study, these linkages have been ‘anchored’ by consideration of existing research into the scope for reducing the onset and duration of mental illness. This analysis has relied on relatively conservative estimates in apportioning the potential gains from PPEI measures, as a complete package, in improving community health outcomes.
- **Some health impacts are excluded** — While the key impacts from mental illness are integrated in the analysis, some forms of health savings (avoided costs) are not included. These include the cost of formal and informal care provided by carers.
- Conversely, the analysis does not account for the additional healthcare costs of increased longevity arising from better health. It should be recognised that these costs, which are often highlighted in the context of population ageing, reflect a most welcome and deliberate outcome — that it is much better to be alive than otherwise.
- **A static approach is adopted** — The analysis does not account for the dynamic aspect of interventions and health cost savings and other benefits. There are often considerable lags between health promotion activities and subsequent health outcomes. The assessment’s static approach also ignores any ‘shifting’ effect where the offset of health costs through primary prevention initiatives can shift expenditure through time. People who would have incurred costs due to specific illness will often incur new (and possibly greater) costs in future years due to old age.
- **Severity and coincidence of illnesses** — The analysis does not account for differences in the severity of particular mental illnesses, which can often be highly variable. Estimates of the avoided health burden should also ideally take into account changes in the prevalence of specific diseases over time.
- Further, some people have more than one mental illness at a particular time, or experience comorbidity with other conditions, such as physical disability. The analysis incorporates the effect of PPEI initiatives on individual illnesses but not the flow-on benefits for those who have multiple conditions.

5 Future directions

The economic impacts of mental illnesses are wide-ranging, persistent and large. For these reasons, mental health is relevant to all Australians, irrespective of whether illness directly affects them or their families at any one time. Indeed, the overall disease burden of mental illness ranks third behind cancer and cardiovascular disease, with mental illness being a leading cause of the non-fatal burden of disease in Australia.

The national conversation around de-stigmatising mental illness has been a positive development in improving Australia's public health. While greater tolerance and public awareness aimed at encouraging people to seek help is seen by some as contributing to higher rates of prevalence of mental illness (through greater disclosure), this is undoubtedly welcome. Foremost, improving the health and wellbeing of all Australians is about better information and acknowledgement of the issues, not pretending that problems do not exist.

Certainly, the presence of good mental health (as opposed to mental illness) has broad benefits to individuals and society such as better physical health, less limitations in daily living, higher education attainment, greater employment and social cohesion. These are all pivotal aspects of quality of life.

Some elements of the policy environment are currently undergoing tremendous change. The National Disability Insurance Scheme (NDIS) will ultimately put in place improvements in supports for severe and persistent mental illness (as well as other forms of disability). While this is clearly a welcome and much-needed policy development supported across political spheres, there needs to be a concerted effort to ensure that the needs of people with less severe conditions (or who are not eligible for NDIS supports) are not overlooked. An unfortunate outcome would be if the NDIS led to greater entrenchment of a treatment-centric insurance model at the expense of effective PPEI focused approaches.

This is not to ignore the realities of the fiscal environment. Simply not all health initiatives and services can (or should) be funded. Rather, it is about safeguarding against any unintended shift in prioritisation and the risk of locking out viable investments aimed at prevention and early intervention which could ultimately reduce long term expenditures. This becomes even more important in the context of population ageing which will increase structural pressures on government budgets.

IMPLICATIONS FOR POLICY FORMULATION AND DELIVERY

There is persuasive evidence that treatment approaches alone are not sufficient to reduce the prevalence of mental illness. Considerable attention needs to be given to implementing effective prevention and early intervention approaches, including outside of specific health-related areas. Over the long term these methods, when targeted carefully, have the potential to deliver meaningful savings in healthcare and associated costs. The scale of potential savings (notwithstanding the actual costs of programs) has been highlighted earlier in this report. It was also central in a recent letter to the Prime Minister by Professor Allan Fels AO (Chair of the National Mental Health Commission) when he observed that mental health is an 'invest-to-save' issue (NMHC 2013).

Because mental health and experience of mental illness is heavily influenced by everyday life settings, this brings into focus opportunities for other sectors beyond healthcare to play a part in improving outcomes. Such areas include education, housing and family support, child protection, sports and recreation, disaster relief and in criminal justice and corrections, although this list is by no means exclusive. These essentially comprise many of the underlying determinants of mental health and, importantly, are areas where government has a major role.

Certainly, there is increased recognition that better outcomes for mental health are influenced by initiatives outside traditional healthcare settings.

For future policy formulation, this has a range of implications:

- To fully embed PPEI approaches as a means of improving mental health outcomes across the community, a range of policy and supports much wider than health services are needed. Partly because of the social and economic costs involved, this is being increasingly reflected in policy priorities. While this has been a welcome improvement over the last decade or so, much more can be done.

- Because of the number of ‘moving parts’, policy development across a diversity of settings with the potential to intersect with and support positive mental health outcomes has really only touched the surface. As highlighted by the different programs explored in Australia and abroad, there is considerable untapped potential to devise new methods and approaches to drive tangible improvements in mental health — perhaps even in ways not yet envisaged.
- Building on the notion of exploring prospective areas for preventing mental illness and intervening early, there is considerable scope to build public and policy-specific recognition of the role of PPEI measures to enhance human capital. The indirect costs of mental illness such as lost productivity are sizeable, with better health overall being shown to have a positive effect on labour market engagement. It is also the case that many people with mental illnesses are younger people — individuals at prime working, developmental and earning stages of their life. This highlights how intervention in the early stages of mental illness can generate key advantages in driving human capital at an individual and community-wide level.

Prospectivity is one thing, but determining whether specific interventions are clinically effective and represent value for money is another. Indeed, this is where the real complications can occur.

For policymakers — who are often caught between managing budget constraints and escalating healthcare costs and pressure to defer new spending — determining whether PPEI measures will help reduce expenditures over the long term (but still within a reasonably foreseeable period) is central. In this regard, the financial and economic implications of any program form an important guide towards decision-making. The loss of another program (its opportunity cost) should also be considered.

There are various components which typically drive the cost effectiveness of PPEI options:

- **Their component costs** — That is, what are the actual costs of on-the-ground delivery of interventions by all providers.
- **The risk profile of targeted individuals** — Health gains and treatment savings are generally greatest for those at highest risks of developing mental illnesses, especially more severe and entrenched conditions, noting the inherent challenges of identifying these people.
- **Frequency of intervention** — How many times does intervention need to occur to have long lasting benefits. The nature and frequency of intervention clearly have cost implications, with many medium to longer term programs requiring repeated involvement. A lack of follow-up support or a tailing-off of commitment can erode the benefits of early intervention and this needs to be considered and costed at the outset. Intervention frequency is particularly relevant for mental illnesses, as repeated intervention is often required when compared to other health conditions which may require only limited and discrete intervention (e.g. a one-off course of antibiotics).

With these issues in mind, successful mental health PPEI programs tend to have the following characteristics:

- based on solid evidence which address key determinants and/or risk and protective factors
- are adequately resourced to ensure interventions are properly followed through
- take a longer term view for positive health outcomes to materialise — often in the range of 3 to 5 years, and sometimes beyond a decade
- leverage cross-sector contact points, with collaboration between various service providers and agencies.

DATA AND EVALUATIONS

Programs and models of support also need to be properly evaluated post hoc. While systematic evaluations are deeply entrenched in a clinical sense, they need to be considered in terms of their economic payoffs and whole-of-life benefits as well (as highlighted earlier).

A key factor is that program development and evaluation often occurs in an uncertain environment, with residual uncertainty on outcomes, especially due to the influence of other factors. A major shortcoming of

governments has been in generating the data needed to evaluate their own programs thoroughly and objectively, with important gains to be made in collecting consistently-structured data on inputs, costs and outcomes of programs, especially over time and where non-health impacts are relevant.

To improve the evidence base in prevention and early intervention mental health programs, further research in the following areas would be helpful:

- The economic impact of mental illness in Australia as a whole is not well understood. There has been a variety of studies examining various aspects of this impact (for example, on depression and young people's illnesses) but a more detailed analysis would help guide relevant policy agendas, especially those where a more integrated approach is needed.
- The policy evaluation of PPEI and other social programs often involves determining a return on investment (ROI). These metrics aim to establish whether programs yield a positive return and how these returns compare to alternative programs. Such evaluations, as discussed earlier, are rarely straightforward and involve uncertainties in measuring outcomes and accounting for a myriad of external influences. Moreover, because PPEI measures often involve long lead times, differences in evaluation approaches can generate markedly different outcomes.
- In light of such issues, there is considerable merit in developing relevant ROI benchmarks for PPEI programs in Australian settings. This would support a stronger evidence base and evaluation culture by instilling consistent principles for various technical aspects of assessment and establishing realistic breakeven thresholds for program outcomes. Effective comparisons among different healthcare and social programs will always be crucial to achieving maximum benefit from taxpayers' investments.
- Workplaces also provide ideal settings for mental illnesses to be identified and for promotion and early intervention-based activities to occur. Further research into the benefit of employment support programs and workplace based measures has the potential to help support those with specific conditions and enhance workplace productivity more generally. This is particularly relevant for SMEs where less attention occurs but which account for about half of private sector employment.
- Additional research into the development of workplace interventions specifically structured for workers in more mobile industries (for example, hospitality and trades etc) could help fill some crucial information gaps. The nature of workplaces has and will continue to change, and many more workers will have more 'dynamic' career paths, often involving a greater number of employers and shorter tenures. These transitions may effectively reduce access for greater numbers of workers to the mental health supports often available within larger institutional environments — simply, more people may spend less or no time working in such corporate settings. Recognising these evolving structures in program delivery (and evaluation) will help make workplace centred interventions more forward-looking, relevant and effective.
- Australia's social services system provides many different forms of support for our most vulnerable citizens. These systems are regularly modified, for example, to change the level of benefits, who receives support and other conditions. Many people, especially those with early stage or less severe mental illnesses, may find themselves at the margins of entitlement. Establishing how changes to aspects of the social safety net impact on mental health outcomes will help inform policymakers on the complete impacts of reforms, and how systems can be best designed to support those at critical times in their lives.

SOME CONCLUDING COMMENTS

The prevalence of mental illnesses in Australia has increased over the last twenty years. The first national survey on mental health in Australia conducted in 1997 found 17.7% of the population had experienced a mental illness in the preceding 12 month period. In 2007, this figure had reached 20%.

It has been acknowledged that mental illnesses have been under-reported in the National Survey for Mental Health and Wellbeing (Slade et al. 2009). There were two main concerns. Firstly, low-prevalence but high-impact psychotic disorders such as schizophrenia were not included. Secondly, the survey was directed at households and thus likely missed sections of the population living in institutions, jails and other settings where people tend to have higher rates of mental illness. As such, it is likely that the actual prevalence of mental illnesses may be few percentage points higher than reported.

A new community wide survey on mental illness in Australia is long overdue.

The prevalence of mental illness in Australia and its related costs represent a major challenge for policy. This report has illustrated the important role of mental health PPEI measures in addressing these issues. At their heart, such measures target health and other issues before they become more serious. While prevention is not always possible, evidence on the effectiveness of PPEI measures in many areas of mental health is strong and encouraging.

This report has illustrated the scale of prospective economic gains, through both fiscal savings and improved labour market outcomes, which may be possible if relatively small reductions in population wide rates of mental illness can be achieved over coming decades.

The study has also proposed an economic framework for considering ongoing investments in mental health PPEI initiatives. The framework aims to provide an 'organising principle' for thinking about longer term population risk factors for mental health and a range of structural and social policy objectives — where smarter and earlier investments can promote community mental health and deliver robust economic returns.

Enhancing our understanding of the effectiveness of PPEI programs and broader policy responses to improving mental health will be critical to meeting one of Australia's major public health challenges in the decades ahead.

A.1 TYPES OF MENTAL ILLNESS

There is a wide variety of mental illnesses and people's experience with mental illnesses (see the American Psychiatric Association's 2013 Diagnostic and Statistical Manual of Mental Disorders). Conditions are generally classified under various broad categories, including anxiety, mood, psychotic and personality disorders. These classifications are essentially clinical; and these are important to provide a framework for the study of mental illnesses and understanding respective treatment protocols, among other reasons.

For the purposes of this study, there is a focus on those conditions which represent the largest component of mental illnesses in Australia, such as anxiety and affective disorders.

Importantly, a person's experience of mental illness is highly individualised. There can be substantial variation in the impacts of mental illness both within and between different diagnoses. A person's psychosocial functioning, clinical progression and costs associated with mental illness are often interrelated, and can be influenced by a complex interplay of factors, depending on an individual's particular circumstances.

ANXIETY DISORDERS

Anxiety disorders generally involve feelings of tension, distress or nervousness. Anxiety is considered a disorder when a person's symptoms of fear or worrying are grossly disproportionate to reality. The symptoms restrict the person's normal life, are not lessened with reassurance and may be accompanied by thoughts and actions that are exaggerated.

Common anxiety disorders include Generalised Anxiety Disorder (GAD), Panic Disorder, Social Phobia, Obsessive Compulsive Disorder (OCD) and Post Traumatic Stress Disorder (PTSD).

MOOD DISORDERS

Mood disorders, sometimes called the affective disorders, are characterised by a disturbance in mood. Many of these disorders tend to be recurrent and the onset of individual episodes can often be related to stressful events or situations.

Forms of mood disorders include Depressive Disorder, Dysthymia and Bipolar Affective Disorder. The most common in Australia is depression and is frequently seen in people with chronic problems such as illness, pain or disability.

PSYCHOTIC DISORDERS

Psychotic disorders are characterised by distortions of thinking and perception, a dis-organisation of thought and behaviour, cognitive impairment, disturbances in communication and social and functional impairment. In effect, there is a profound inability to distinguish between external reality and internal fantasy.

The most prevalent form of psychotic disorder is schizophrenia.

PERSONALITY DISORDERS

Personality disorders involve pervasive and enduring patterns of inner experience and behaviour that deviates from the expectations of the individual's culture. These typically manifest as inflexible and extreme responses to a wide range of social and personal situations. Patterns of behaviour lead to distress or functional impairment and are usually stable and long term.

There are three key groupings of personality disorder:

- *Cluster A personality disorders* — Characterised by odd, eccentric thinking or behaviour. Include paranoid personality disorder and schizoid personality disorder.
- *Cluster B personality disorders* — Involving dramatic, overly emotional or unpredictable thinking or behaviour. They include antisocial personality disorder, borderline personality disorder and narcissistic personality disorder. Of all the personality disorders people with cluster B disorders are the ones that most commonly present to services.
- *Cluster C personality disorders* — Characterised by anxious, fearful thinking or behaviour. They include avoidant personality disorder, dependent personality disorder and obsessive-compulsive personality disorder.

A general feature of personality disorders is that they tend to develop in adolescence or early adulthood and are generally life-long.

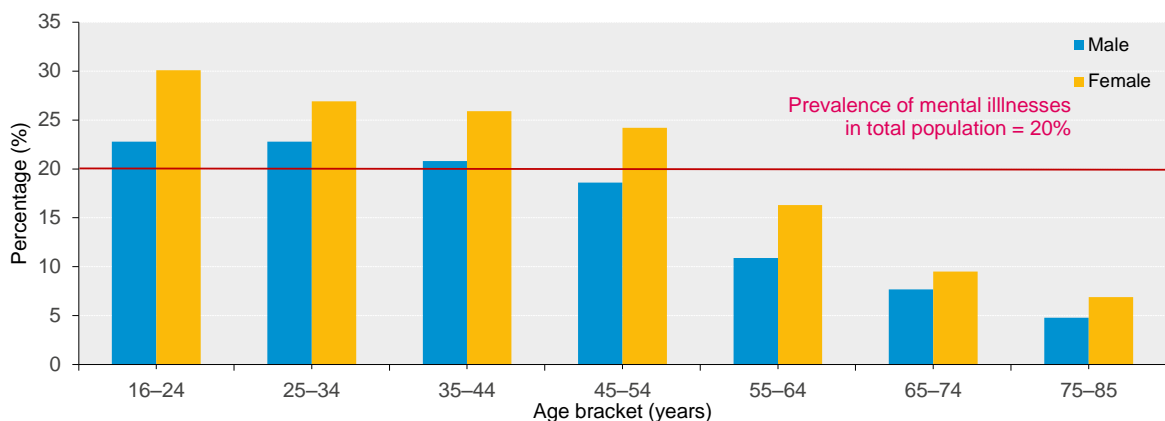
A.2 ASPECTS OF MENTAL ILLNESS IN AUSTRALIA

Poor mental health is a significant issue across the whole population. About one in five Australians aged 16-85 experience one of the more common forms of mental illness over a 12 month period, with around 45% of people experiencing a mental illness over their lifetime (AIHW 2013).

While now more than six years old, the most detailed picture of mental illness in Australia remains the 2007 National Survey of Mental Health and Wellbeing conducted by the ABS. This survey provides a detailed demographic and social breakdown of mental illness, in particular how gender, age, type of illness and life characteristics (including labour force status) are each important factors in understanding the broader mental health environment.

Figure A.1 shows the age structure of mental illness in Australia. The prevalence of mental disorders is highest among younger people (16-24 years) and gradually reduces by age. Both genders show this consistent pattern, but at all age brackets females have noticeably higher rates of mental illness. For example, across the 16-24 age group the mental illness prevalence rate for females was 30%, compared to 22.8% for males.

FIGURE A.1: PREVALENCE OF MENTAL ILLNESS BY AGE

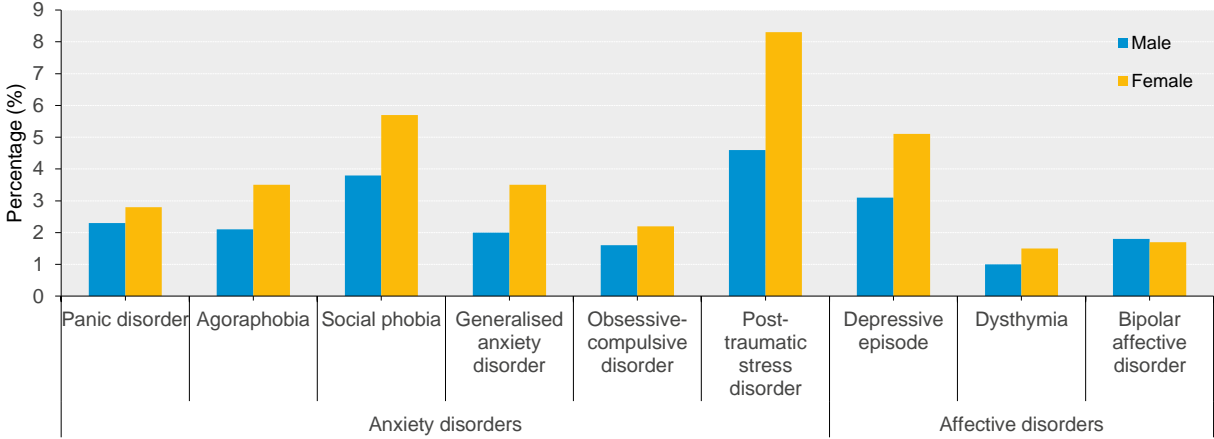


Note: Data show 12-month prevalence rates for age cohorts.
Source: ABS National Survey of Mental Health and Wellbeing 2007

In terms of the prevalence of different forms of mental illnesses, anxiety disorders are most common (14.4% of Australians aged 16-85) followed by affective disorders (6.2% of Australians aged 16-85) such as depression. There are also consistent gender patterns across the spectrum of mental illnesses (see Figure A.2), with women reporting higher rates of all common forms of mental illness (with the exception of bipolar affective disorder where rates are almost similar).

In particular, women report post-traumatic stress disorder and depression at substantially higher rates than men, with rates of these illnesses approximately 80% and 64.5% higher for women respectively.

FIGURE A.2: PREVALENCE OF MENTAL ILLNESS BY TYPE

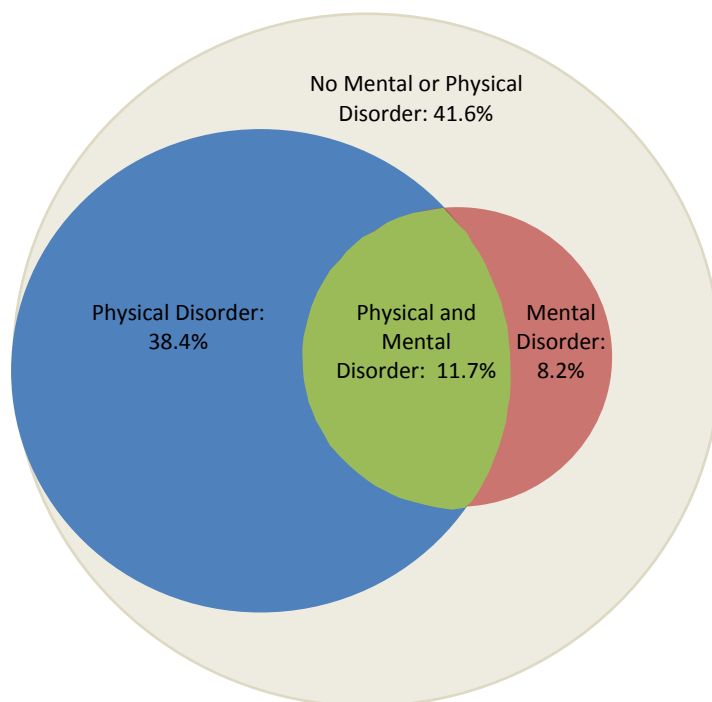


Note: Mental illnesses shown as a percentage of the prevalence in the total population (e.g. approximately 2% of the male population aged 16-85 experience panic disorder). One person can be counted in multiple illness types.
 Source: ABS National Survey of Mental Health and Wellbeing 2007

A major feature of mental illness is its high rates of comorbidity — this involves two or more mental illnesses or a physical illness occurring together. Comorbidity is especially common with advancing age, when a number of physical and mental health conditions coexist. Research indicates that physical health problems not only coexist with mental illness such as depression, but can also predict the onset and persistence of depression (see WHO 2004). Other common situations include anxiety and depression occurring together, as well as the coexistence of substance misuse or other mental illnesses.

In Australia, just under 12% of the population experience a mental disorder and a physical disorder concurrently (see Figure A.3). The presence of significant comorbidity has major implications for illness identification, treatment and costs. Associated complexities with different forms of ill health necessarily increase the overall level of disability experienced by people with mental illness, as well as the costs of formal and informal forms of care.

FIGURE A.3: COMORBIDITY OF MENTAL ILLNESSES IN THE AUSTRALIAN POPULATION



Source: ABS National Survey of Mental Health and Wellbeing 2007

Causal factors for mental illness are tremendously complex, and in many cases have not yet been fully understood. Yet, a key aspect of mental illness is its strong association with various forms of economic and social disadvantage.

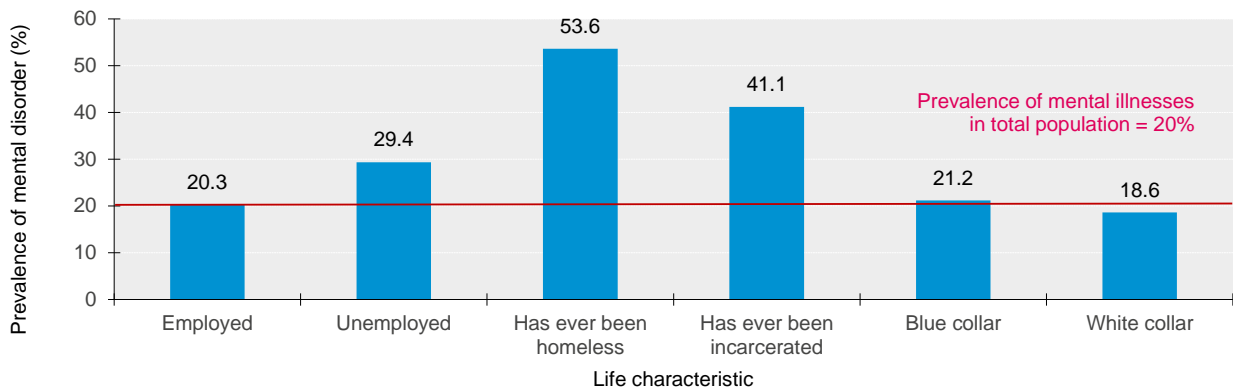
This is clearly borne out in the patterns of mental illness for people with different life experiences (see Figure A.4). Individuals who face difficult socioeconomic circumstances have much higher rates of mental illness than other sections of the community.

For example, the 12-month prevalence of mental illness for those who have ever been homeless or incarcerated is at 53.6% and 41.1% respectively, much higher than the population average of 20%. In addition, unemployed people (29.4% of unemployed have had symptoms of any lifetime mental illness in the last 12 months) are more likely to experience mental illness than those who are employed.

There is little difference in the prevalence of mental illnesses across people engaged in blue or white collar occupations. Simply, the biggest factor is whether an individual is actually employed or unemployed, rather than what form of work they do.

In examining these patterns, a few issues should be noted. The relativities between prevalence rates associated with different life experiences are more telling than the comparisons with the population average. This is due to the effect of the larger sized groups (such as employed people) in influencing the population-wide average.

FIGURE A.4: MENTAL ILLNESS AND LIFE CHARACTERISTICS



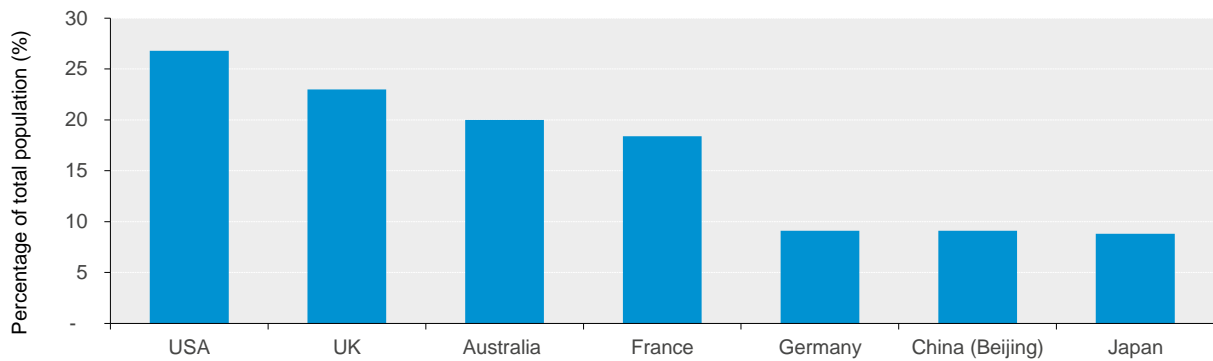
Source: ABS National Survey of Mental Health and Wellbeing 2007

Mental health issues are not a uniquely Australian problem. Indeed, the profile of mental illness and their cost burden in Australia is highly consistent with that of other developed economies (see Figure A.5). Comparisons across countries should be made with caution given a range of clinical and survey related measurement issues.

However, the importance of mental illness is reflected in recent work undertaken by international bodies such as the OECD and WHO which have clearly recognised that mental illnesses are very much a global health issue. High-income and developing countries are grappling with how to address mental illness in the context of their respective fiscal and healthcare environments.

A major thrust of the international attention on mental illness has centred on tackling discrimination and attendant barriers to care which exist to some extent everywhere (in some countries, these are much worse than others). Moreover, in doing so, the work has emphasised the complex interaction between biological, psychological and social factors on mental health, and the acute inseparability of mental and physical health as an intrinsic aspect of the public health priorities for governments.

FIGURE A.5: PREVALENCE OF MENTAL ILLNESS IN SELECTED COUNTRIES



Note: Comparison of mental illness prevalence in different countries, reported as experiencing mental illness in the past 12 months, given as a percentage of total population.

Source: WHO World Mental Health Surveys, ABS, Urbis

THE DISEASE BURDEN OF MENTAL ILLNESS

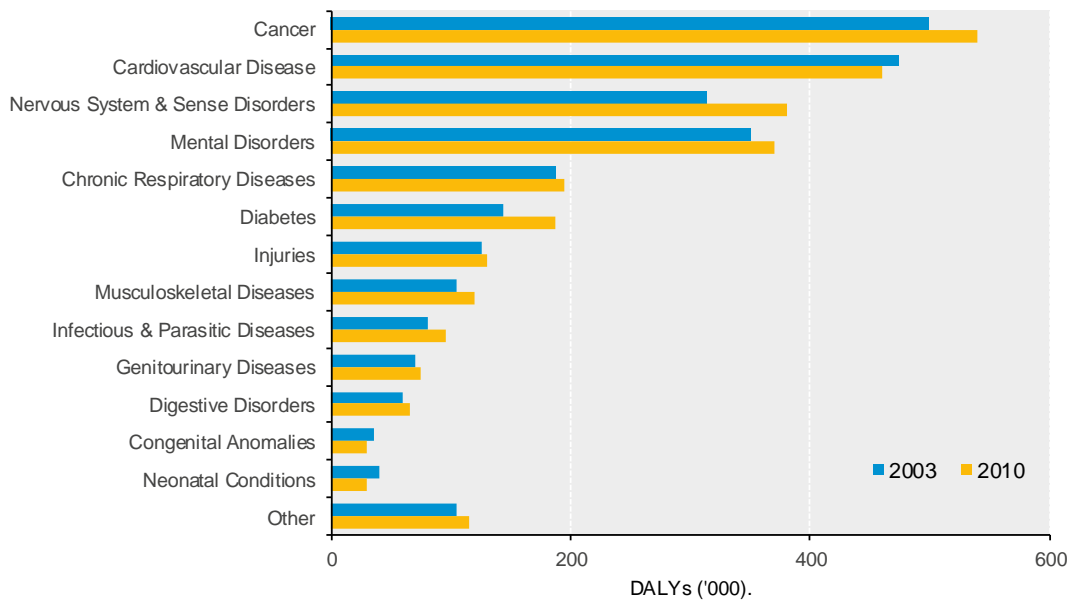
The burden of disease is a financial measure of the relative impact of different diseases and injuries on populations. The health impact of specific diseases is dependent on their prevalence across the community as well as their relative effect in contributing to mortality and morbidity. It is measured and compared using the disability adjusted life year (DALY) which treats disability and death on the same

terms. One DALY is equivalent to one year of healthy life lost, including from both fatal and non-fatal disease.

The overall disease burden can be conceptualised as the ‘gap’ between the current health status and the ideal health status, where someone lives to an old age free from disability and disease.

The estimated burden of disease (which captures both morbidity and mortality aspects of disease) in Australia is shown in Figure A.6. Mental illness is one of the largest contributors of the disease burden nationally, which is predominantly driven by its disabling impacts rather than as a cause of premature death.

FIGURE A.6: ESTIMATED AND PROJECTED BURDEN (DALYS) OF MAJOR DISEASE GROUPS



Note: 2010 figures are estimates based on trends from the 2003 figures

Source: AIHW 2012, Cat. No AUS156

Appendix B Summary of evidence on mental health PPEI initiatives

An overview of key evidence on mental health PPEI based initiatives is provided below. The review adopted a cross sector approach, given the breadth of PPEI interventions and their settings, and had a policy/economic rather than clinical focus for inclusion. It was not conducted using a systematic or meta analytic approach to examine all primary studies relevant to a particular question using defined search strategies. Rather, it aimed to provide a broad based synthesis of current research in, or relevant to, an Australian context in order to highlight where PPEI options demonstrated specific potential.

TABLE B.1: A REVIEW OF THE EVIDENCE ON MENTAL HEALTH PPEI INITIATIVES

SOURCE	INTERVENTION	EFFECTIVENESS	TIME HORIZON	ISSUES/COMMENTS
<i>Programs for Depression</i>				
Modelling the impact of enhanced depression treatment on workplace functioning and costs. A cost-benefit approach. <i>Lo Sasso et al. 2006 USA</i>	Employed primary care patients with depression were treated in practices randomly assigned to an enhanced treatment intervention, in theory funded by employer.	Net benefits of implementing enhanced treatment for employer: <i>Year 1: US\$30 per worker. Year 2: US\$257 per worker. ROI over 2 years: 302%</i>	2 years	ROI is higher for firms that rely more on team production. ROI lower for firms with higher turnover rates.
The cost-utility of screening for depression in primary care. <i>Valenstein et al. 2001 USA</i>	Various types of screening for depression.	One time screening can be cost effective if low cost and effective treatment. Any more regular screening cost in excess of \$US 50,000 per QALY (which is considered to be a critical threshold for cost effectiveness).	Lifetime	Screening of primary care patients is unlikely to be cost effective.
Do indicated preventative interventions for depression represent good value for money? <i>Mihalopoulos et al. 2011 Australia</i>	Either bibliotherapy (screening by GP for symptoms, followed by one-on-one treatment) or group-based psychological intervention were applied.	Bibliotherapy: \$8,600 per DALY. Group-based psychological intervention: \$20,000 per DALY. Both are below accepted threshold of \$50,000 per DALY.	Economic modelling applied to different time horizons	Supports screening and preventative treatments for depression, in contrast to Valenstein et al. 2001.

SOURCE	INTERVENTION	EFFECTIVENESS	TIME HORIZON	ISSUES/COMMENTS
Psychological and educational interventions for preventing depression in children and adolescents. <i>Merry et al. 2011 USA</i>	Meta-analysis of studies on interventions for prevention of depression in children and adolescents. Included were both universal and targeted programs.	Risk of having a depressive disorder post-intervention was reduced by a significant level up to 12 months later. After this period there was limited evidence of preventing depressive disorders.	3 years	
Programs for Anxiety				
Prevention and early intervention for anxiety disorders: a controlled trial. <i>Dadds et al. 1997 Australia</i>	A sample of 14 year olds was screened for anxiety problems using school teacher nominations and self-reporting. Those selected were assigned to a 10-week psychosocial intervention or monitoring group.	After screening both groups showed improvements. In 6 month follow up, improvement maintained in intervention group only.	6 months	Early screening and treatment of anxiety disorders can reduce prevalence and onset of new disorders.
The employment of people with mental illness <i>Waghorn 2005 Australia</i>	Population level assessment of labour force participation, employment and work performance among people with anxiety disorders.	More people with anxiety disorders were not in the labour force and fewer were employed, more people received government pensions or allowances as their principal source of income. Approximately 59% with anxiety disorders reported receiving treatment while 41% did not.		Suggested scope to increase labour force participation of people with anxiety disorders. Increasing use of evidence-based treatments co-linked to income support arrangements and tailored vocational assistance may be needed for those not in the labour force.
Programs for Psychosis				
Cost implications of specific and non-specific treatment for young persons at ultra-high risk (UHR) of developing a first episode of psychosis. <i>Phillips et al. 2009 Australia</i>	Two different treatments applied to those at UHR. Specific preventative intervention (SPI) and Needs-based intervention (NBI).	SPI had significantly higher costs in the short run, but significantly lower patient costs in the long term.	Approximately 4 year timeframe until final follow-up.	
Is early intervention in psychosis cost-effective over the long term? <i>Mihalopoulos et al. 2009 Australia</i>	Examined long term economic effectiveness of the Early Psychosis Prevention and Intervention Centre (EPPIC) in Melbourne.	Early psychosis interventions deliver a higher recovery rate and much better cost effectiveness. Those in EPPIC program cost A\$3445 per annum to treat while control cost A\$9503 per annum (2009 prices).	8 years.	Limited sample sizes reduced the strength of result. Cost-effectiveness of EI in psychosis is a contentious field.
Cost-effectiveness of an early intervention service for people with psychosis. <i>McCrone et al. 2010 UK</i>	Used a randomised controlled trial to compare cost-effectiveness of an early intervention (EI) service compared to standard care in London.	Mean costs for the EI group were lower, but not statistically significantly. When costs were combined with improved vocational and quality of life outcomes EI had a very high likelihood of being cost-effective.	6 and 18 month follow ups.	Strong experimental rigour.

SOURCE	INTERVENTION	EFFECTIVENESS	TIME HORIZON	ISSUES/COMMENTS
Workplace and Housing Programs				
Cost-effectiveness of guideline based care for workers with mental health problems. <i>Rebergen et al. 2009 Netherlands</i>	GPs trained in "Guideline-Based Care" (GBC) treated police workers with mental health problems against a control group of general practitioners with no GBC.	Healthcare utilisation costs were significantly lower in the GBC group. No significant difference in days of sick leave taken and productivity loss costs.	1 year	GBC is a set of guidelines introduced in the Netherlands to help general practitioners assist workers with mental health problems. The guidelines meant general practitioners did not always need to defer treatment to a psychologist. A similar approach could prove effective in Australia.
Impact of a health promotion program on employee health risks and work productivity. <i>Mills et al. 2007 UK</i>	A multicomponent health promotion program incorporating a health risk appraisal questionnaire, access to a tailored health improvement web portal, wellness literature, and seminars and workshops focused upon identified wellness issues.	Reduction of 0.36 monthly absenteeism days. Assessment of the program indicated an ROI of 6.19:1.	1 year	
Effects of health and education on labour force participation. <i>Laplagne et al. (Productivity Commission) 2007 Australia</i>	Uses modelling to estimate the marginal effects of preventing a health condition or increasing education level on labour force participation.	Of six health conditions analysed, <i>preventing</i> a mental health condition had the largest positive effect on labour force participation rates for both males and females.		Modelling may be affected by bias due to unobserved characteristics of individuals. However, the modelling provides a focus for cost-benefit analyses of possible changes to health policies.
Social security and mental illness: reducing disability with supported employment. <i>Drake et al. 2009 USA</i>	Individual placement and support for people with a mental disorder looking for employment.	Depending on severity of the mental disorder, can be a cost effective intervention for governments. Savings made in removing people from disability pension and in health costs.		Based on assumptions around severity of disorders and costs of implementing the program.
Evaluation of the NSW Housing and Accommodation Support Initiative (HASI) <i>Bruce et al. 2012 Australia</i>	HASI aims to provide adults in NSW with a mental health diagnosis with access to stable housing, clinical mental health services and accommodation support. Longitudinal evaluation of the HASI program.	Assessed effectiveness of support for consumers, the benefits and limitations of the service model, and the cost of the program.		HASI clients had significantly fewer and shorter mental health hospital admissions. The HASI program has achieved its aim of stable housing for most clients. Clients were continuing to participate in education and work. The annual cost of HASI per person ranges between \$11,000 and \$58,000, plus project management costs of \$200-\$500 per person.

Appendix C

References

C.1 SPECIFIC MENTAL HEALTH RESEARCH

- ABS (Australian Bureau of Statistics) 2007, National Survey of Mental Health and Wellbeing, Cat.no.4326.0, Canberra.
- Andrews G., Henderson S. and Hall W. 2001, 'Prevalence, Comorbidity, Disability and Service Utilisation: Overview of the Australian National Mental Health Survey', *British Journal of Psychiatry*, vol.178, pp. 145-153.
- Australian Institute of Health and Welfare 2011, Comorbidity of Mental Disorders and Physical Conditions 2007, Cat. no. PHE 155, Canberra.
- Bauer A., Parsonage M., Knapp M., Lemmi V. and Adelaja B. 2014, The Costs of Perinatal Mental Health Problems, Centre for Mental Health and London School of Economics, London.
- Bruce J., McDermott S., Ramia I., Bullen J. and Fisher KR. 2012, Evaluation of the Housing and Accommodation Support Initiative (HASI) Final Report, NSW Health and Housing NSW, Social Policy Research Centre Report, Sydney.
- Cuijpers P., van Straten A., Smits N. and Smit F. 2006, 'Screening and Early Psychological Intervention for Depression in Schools', *European Child and Adolescence Psychiatry*, vol. 15 (5), pp.300-307.
- Department of Health and Ageing 2013, National Mental Health Report 2013: Tracking Progress of Mental Health Reform in Australia 1993-2011, Commonwealth of Australia, Canberra.
- Greenberg M., Domitrovich C., Graczyk P. and Zins J. 2001. The Study of Implementation in School-Based Prevention Research: Implications for Theory, Research, and Practice. Center for Mental Health Services, Substance Abuse and Mental Health Services Administration, Rockville, Maryland.
- Hickie I., Groom G. and Davenport T. 2004, Investing in Australia's Future: The Personal, Social and Economic Benefits of Good Mental Health, Mental Health Council of Australia, Canberra.
- Knapp M., McDaid D. and Parsonage M. 2011, Mental Health Promotion and Prevention: The Economic Case. Personal Social Services Research Unit, London School of Economics and Political Science, London.
- Laplagne P., Glover M. and Shomos A. 2007, Effects of Health and Education on Labour Force Participation, Productivity Commission, Melbourne.
- Leach L. and Butterworth P. 2012, 'The effect of early onset common mental disorders on educational attainment in Australia', *Psychiatry Research*, vol.199 (1), pp. 51-57.
- Lim D., Sanderson K. and Andrews G. 2000, 'Lost Productivity Among Full-Time Workers with Mental Disorders', *Journal of Mental Health Policy and Economics*, vol. 3, pp. 139-146.
- Matrix Insight 2012, Economic Analysis of Workplace Mental Health Promotion and Mental Disorder Prevention Programmes and of their Potential Contribution to EU Health, Social And Economic Policy Objectives, Final Report, November.

- Slade T., Johnston A., Teesson M., Whiteford H., Burgess P., Pirkis J. and Saw S. 2009, *The Mental Health of Australians, Report on the 2007 National Survey of Mental Health and Wellbeing*, Department of Health and Ageing, Canberra.
- Tasmanian Department of Health and Human Services 2010, *Hope-Recovery-Future: Using the Individual Support Program to Gain Competitive Employment*. Tasmania.
- Van der Klink J., Blonk R., Schene A., and Van Dijk F. 2001, 'The Benefits of Interventions for Work-Related Stress', *American Journal of Public Health*, vol. 91(2), pp. 270-276.
- Vasiliadis HM., Dionne PA., Prévaille M., Gentil L., Berbiche D. and Latimer E. 2013, 'The Excess Healthcare Costs Associated With Depression and Anxiety in Elderly Living in the Community', *American Journal of Geriatric Psychiatry*, vol. 21(6), pp. 536-548.
- Vos T., Carter R., Barendregt J., Mihalopoulos C., Veerman JL., Magnus A., Cobiac L., Bertram MY. and Wallace AL. 2010, *Assessing cost-effectiveness in prevention (ACE-prevention): Final report*, University of Queensland, Brisbane and Deakin University, Melbourne.
- Waghorn G. 2012, *Submission to Parliament of Victoria Inquiry into Workforce Participation by People with a Mental Illness*, Queensland Centre for Mental Health Research, Brisbane.
- Waghorn G. and Lloyd C. 2005, 'The Employment of People with Mental Illness', *Australian e-Journal for the Advancement of Mental Health*, vol. 4, no. 2, pp. S1-S43.
- Waghorn G., Chant D., Lloyd C. and Harris M. 2009, 'Labour Market Conditions, Labour Force Activity, and Prevalence of Psychiatric Disorders', *Social Psychiatry and Psychiatric Epidemiology*, vol. 44, pp. 171-178.
- WHO (World Health Organization) World Mental Health Survey Consortium 2004, 'Prevalence, Severity, and Unmet Need for Treatment of Mental Disorders in the World Health Organization World Mental Health Surveys', *Journal of the American Medical Association*, vol. 291(21), pp. 2581-2590.

C.2 BROADER RESEARCH

- Australian Institute of Health and Welfare (AIHW) 2013, *Health Expenditure Australia 2011-12, Health and Welfare Expenditure Series*, no. 50. Cat. no. HWE 59, Canberra.
- Australian Government 2015, *Australia in 2055: Intergenerational Report*, Commonwealth of Australia, Canberra.
- Boland M. and Murphy J. 2012, *The Economic Argument for Prevention of Ill-Health at Population Level*, Working Group on Public Health Policy Framework, Canberra.
- Casey L. 2013, *Australian Psychological Society, Stress and Wellbeing in Australia Survey 2013*, Australian Psychological Society.
- Dalziel K., Segal L. and Mortimer D. 2008, 'Review of Australian Health Economic Evaluation – 245 Interventions: What Can We Say About Cost Effectiveness?', *BioMed Central*, pp. 6-12.
- Medibank and Nous Group 2013, *The Case for Mental Health Reform in Australia: a Review of Expenditure and System Design*, Melbourne.
- Merkur S., Sassi F. and McDaid D. 2013, *Promoting Health, Preventing Disease: Is There An Economic Case?* World Health Organization, Geneva.
- National Mental Health Commission, National Mental Health Commission 2013, *A Contributing Life: the 2013 National Report Card on Mental Health and Suicide Prevention*, Sydney.
- 2012 National Report Card on Mental Health and Suicide Prevention, referencing AIHW 2007: <http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=6442459747>

Productivity Commission 2011, Disability Care and Support - Appendix K, The Disability Support Pension, Report no. 54, Canberra.

Russell LB. 2009, 'Preventing Chronic Disease: An Important Investment, But Don't Count on Cost Savings', *Health Affairs*, vol. 28, pp. 42-45.

Woolf SH. 2009, 'A Closer Look at the Economic Argument for Disease Prevention', *Journal of American Medical Association*, vol. 31, no. 5, pp. 536-538.

Woolf SH, Husten CG., Lewin LS., Marks JS., Fielding JE. and Sanchez EJ. 2009, *The Economic Argument for Disease Prevention: Distinguishing Between Value and Savings*, National Commission on Prevention Priorities, Washington DC.

C.3 LITERATURE REVIEW REFERENCES

Cotton P. and Hart P. 2003, 'Occupational Wellbeing and Performance: A Review of Organisational Health Research', *Australian Psychologist*, vol. 38, no. 2, pp. 118-127.

Dadds MR., Spence SH., Holland DE, Barrett PM. and Laurens KR. 1997, 'Prevention and Early Intervention For Anxiety Disorders: A Controlled Trial', *Journal of Consulting and Clinical Psychology*, vol. 65, no. 4, pp. 627-635.

Drake RE., Skinner JS. Bond GR. and Goldman HH. 2009, 'Social Security and Mental Illness: Reducing Disability Support Pension', *Health Affairs*, vol. 28, no. 3, pp. 761-770.

Laplagne P., Glover M. and Shomos A. 2007, *Effects of Health and Education on Labour Force Participation*, Staff Working Paper, Melbourne.

Lo Sasso AT., Rost K. and Beck A. 2006, 'Modelling the Impact of Enhanced Depression Treatment on Workplace Functioning and Costs. A Cost-Benefit Approach', *Medical Care*, vol. 44, no. 4, pp. 352-358.

McCrone P., Craig TKL., Power P. and Garety PA. 2010, 'Cost-Effectiveness of an Early Intervention Service for People with Psychosis', *British Journal of Psychiatry*, vol. 196, pp. 377-382.

Merry SN., Hetrick SE., Cox GR., Brudevold-Iverson T., Bir JJ. and McDowell H. 2011, *Psychological and Educational Interventions for Preventing Depression in Children and Adolescents*, *The Cochrane Database of Systematic Reviews*, Issue 12.

Mihalopoulos C., Vos T., Pirkis J., Smit F. and Carter R. 2010, 'Do Indicated Preventative Interventions For Depression Represent Good Value For Money?', *Australian and New Zealand Journal of Psychiatry*, vol. 45, pp. 36-44.

Mihalopoulos C., Harris M., Henry L., Harrigan S. and McGorry P. 2009, 'Is Early Intervention in Psychosis Cost-Effective Over The Long Term?', *Schizophrenia Bulletin*, vol. 35, no. 5, pp.909-918.

Mills PR., Kessler RC., Cooper J. and Sullivan S. 2007, 'Impact of a Health Promotion Program on Employee Health Risks and Work Productivity', *American Journal of Health Promotion*, vol. 22, no. 1, pp.45-53.

Phillips LJ., Cotton S., Mihalopoulos C., Shih S., Yung AR., Carter R. and McGorry P. 2008, 'Cost Implications of Specific and Non-Specific Treatment For Young Persons at Ultra High Risk of Developing a First Episode of Psychosis', *Early Intervention in Psychiatry*, vol. 3, pp. 28-34.

- Rebergen DS., Bruinvels DJ., van Tulder MW., van der Beek AJ. and van Mechelen M. 2009, 'Cost-Effectiveness of Guideline Based Care for Workers With Mental Health Problems', *Journal of Occupational and Environmental Medicine*, vol. 51, no. 3, pp. 313-322.
- Schofield D., Shrestha R., Percival R., Kelly S., Passey M., Callander E. 2011, 'Quantifying the Effect of Early Retirement on the Wealth of Individuals with Depression or Other Mental Illness', *The British Journal of Psychiatry*, vol. 198(2), pp. 123-128.
- Thomson H., Petticrew M. and Morrison D. 2001, 'Housing Interventions and Health: A Systematic Review', *British Medical Journal*, vol. 323, pp. 187-190.
- Valenstein M., Vijan S., Zeber JE., Boehm K. and Buttar A. 2001, 'The Cost-Utility of Depression in Primary Care', *American College of Physicians - Annals of Internal Medicine*, vol. 134, no. 5, pp.346-360.

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