AUSTRALIAN HEALTH POLICY COLLABORATION

Beyond the Fragments: Preventing the Costs and Consequences of Chronic Physical and Mental Diseases

Issues paper No. 2015-05
December 2015

Maria Duggan
Australian Health Policy Collaboration

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The Australian Health Policy Collaboration

The Australian Health Policy Collaboration was established at Victoria University in 2015 to build from the work of the health program at the Mitchell Institute over the previous two years. The Collaboration is an independent think tank that aims to attract much required attention to the critical need for substantial and urgent health policy reform focused on addressing chronic disease on a national scale.

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Foreword

Australia has a proud record of good policymaking to improve population health. Similarly ground-breaking policy approaches are required now to cope with the profound shift in the nature of illness in recent decades. Infections and injuries have become less common; chronic diseases such as diabetes and heart disease and mental health disorders have become much more so.

Chronic diseases aren't 'cured' by a visit to a GP or a single medical procedure. These diseases are often incurable, escalate without the right kind of care, and need to be managed, sometimes over decades. They often require the expertise of several types of health care professional and self-management by patients and their families. Beyond this, local communities can do much to tackle the risks and obstacles to living well through health education and health promotion, the creation of a built environment that encourages physical exercise as part of everyday activity, tackling sources of unhealthy food, and cracking down on violence and abuse. In Australia and elsewhere in the developed world, the remedies for the ills we now face are societal and involve systems, structures and ways of living that are far beyond the remit of healthcare.

Nonetheless, the healthcare system retains a vital role in treating and managing chronic conditions, and it is becoming clear that it hasn't kept pace with the vast and paradoxical societal changes which mean that more people are living with chronic physical and mental illnesses whilst the population overall is healthier and living longer. The vast bulk of Medicare funding pays for one-off visits. In 21st century Australia a patient is more likely than ever to need several types of health care, but there has been little progress in creating a joined-up care experience. Too often, patients navigate around a fragmented system, endlessly repeating their stories to multiple professionals in multiple settings or undergoing repeated diagnostic tests. The separation of responsibilities for streams of healthcare funding between the Commonwealth, states and territories means that it will be difficult to find a national solution to the fragmentation, inefficiency and increasing ineffectiveness of current arrangements. Encouragingly, the Federal Government has established a Primary Health Care Advisory Group to review these issues and it is hoped that this group will produce realistic macro-level proposals – and that the government will listen and act. Additionally, the context set by the *Reform of the Federation White Paper*, published in 2014, offers an opportunity for changes to governments' current responsibilities for health services and new collaboration arrangements.

This paper is part of an Australian Health Policy Collaboration series outlining the compelling evidence about the challenges of making our health systems fit for 21st century conditions. It has a very specific focus on the needs of people with chronic and complex conditions which often involve concurrent physical and mental health problems. Evidence tells us that integrated responses to complex interactions produce better outcomes; achieving this will mean moving beyond the fragmentation that characterises our current approach. This paper suggests that we need to start thinking about integrated care as a broader shift away from fragmentation and towards improved population health. Achieving this will require coherent action at various levels, from government to the clinical front line. It is time to change course in policy, funding and service models.

Rosemary Calder

Director
Australian Health Policy Collaboration

Executive Summary

By world standards, Australia has robust systems to respond to physical and mental ill health. That is not to say, however, that either 'system' is easy to navigate, or that they work well together, or that they provide health care that is of consistent quality, cost-effective and delivers optimal health outcomes across the population. There is substantial evidence that a lack of integrated prevention and management strategies contributes to greater burdens of chronic illness and disability, greater health care costs, and a range of other avoidable social and economic costs.

At the same time, life expectancy is increasing for both men and women in Australia, but this increased length of life is not accompanied by good health into old age for many people. Population ageing and the changing burden of disease, particularly the increasing prevalence of chronic diseases, is placing increasing demands on health and social welfare systems in Australia as in other OECD countries. The disabilities and vulnerabilities that arise from this burden also place considerable demands on unpaid and family carers. A large proportion of this burden of illness and disability is due to increasing numbers of people in the population with two or more chronic conditions, or multimorbidity. Physical and mental health conditions are frequently both involved in the burden of chronic multimorbidity; each is a risk factor for the other. There is strong evidence that outcomes from treatments are worse when individuals have disorders of body and mind. Indeed, in some circumstances, the treatment for one condition is damaging to the other.

The physical health of people with severe mental illness can be particularly badly affected by treatment. There is equally strong evidence about the potential for chronic disease impacts from some pharmaceutical treatments for severe mental illness in the absence of proactive monitoring of physical as well as mental health status.

Multimorbidities affect people of all ages. People with multimorbidity are more likely to die prematurely than those with single conditions, be admitted to hospital and have longer hospital stays. They have poorer quality of life, loss of physical functioning, and are more likely to experience chronic depression and/or anxiety and to be receiving multiple drugs, with consequent difficulties with adherence. There is clear evidence that multimorbidities are associated with socio-economic deprivation; the onset of multimorbidity occurs 10 to 15 years earlier amongst people living in the most deprived areas than in those living in the least deprived areas.

Despite the increasing prevalence of multimorbidity in the population, the delivery of health care is mainly shaped around single diseases. The inability of the current system to respond well to multimorbidity is intensified through the separation of the mental health system from the physical health system. The complex needs of people with multimorbidities are often poorly addressed, partly as a consequence of the navigation challenges that are inherent in the architecture of current health services. These are compounded by the difficulties of coordination and communication across services and systems and between the multiple specialists and generalists often involved in the care of individuals with multimorbidities.

International interest in integrated care reflects these issues. There is increasingly strong evidence of the effectiveness of integrated and collaborative care models in improving outcomes amongst people receiving treatment for multimorbidities. This agenda has been driven in part by the development of the Triple Aim, defined by the Institute of Healthcare Improvement as:

- improving the patient experience of care (including quality and satisfaction);
- improving the health of populations; and
- reducing the per capita cost of health care.

Reflecting the Triple Aim, the non-profit health maintenance organisation Kaiser Permanente (USA) has changed its original reactive, treatment-oriented model to proactively support individuals and population groups to remain healthy and also to deliver bespoke, evidence-based treatments when people become ill. This model takes into account the growing recognition that in relation to health, as in so many other areas of human life, one size does not fit all. For example, gender matters, affecting both the kinds of treatments that should be offered as well as responses to treatments. Age also matters; children and adults require different interventions and older adults can have quite different needs again. There are many variables in play in defining the 'right' approach to individual care. This model involves much greater knowledge about the populations being served and the flexible implementation of targeted interventions and therapies that take into account the diversity of population groups and individuals. These are profound changes which have impelled Kaiser Permanente to fundamentally re-think the nature of its business. Similar developments are seen in many countries other than the USA but are not yet happening in Australia at a scale that reflects the level of demand.

In the interim, innovations in integrated and collaborative care, some cited in this paper, can be seen as the seeds of the future health system. These include the important work being undertaken by front line primary care clinicians working within the Australian Primary Care Collaboratives (APCC). The challenge is to find ways of extending and mainstreaming these approaches to support broad transformation and ultimately to improve population health. In this paper it is suggested that the development of integrated and collaborative care service models, whilst important, should be understood as only one element in a much more radical refocusing of health policy aimed at the creation of a population health system. This would enable the delivery of world-class, evidence-based health care for people at high risk of developing chronic conditions and supporting them to manage these better when they do occur. It would direct all available resources towards the prevention of avoidable illness and the promotion of health and, in so doing, improve the quality as well as the length of life. This would make Australia a world leader amongst developed nations in implementing health policy and creating a service system configured to address the changing patterns of health and disease that are evident in populations in the 21st century. The social and economic rewards which would flow from achieving a step-change in population health would be considerable, not least because many more people could remain healthy into old age and continue to have longer, more productive and fulfilled lives. This would in turn, reduce health care use and costs and the welfare dependence burden arising from disability.

The Australian Health Policy Collaboration is working with primary and secondary care clinicians to develop Australian models for integrated care; these will be described in a forthcoming Issues paper.

Structure

This paper draws on existing evidence that interacting mental and physical disorders contribute to the burden of multimorbidity in Australia. The consequences of multimorbidities for public health and for the economy are considered. Further to this, consideration is given to the structural barriers that inhibit the provision of care which optimises both mental and physical health.

This is followed by a brief discussion of the limited but accumulating evidence on prevention and management of multimorbidity, and of the health and economic benefits that might result from a new approach. Several integrated and collaborative care interventions show promise. These interventions typically involve proactive case finding and screening for multimorbidities in primary care, collaborative care (sometimes using practice nurses as case managers), integration of psychological therapies into chronic disease management programs, peer support for self-care amongst people with multimorbidities, risk factor reduction at the local level, and anti-stigma interventions amongst health care staff.

A case is made for a new policy framework which incentivises the development of integrated care. This is essential in the face of the increasing prevalence of chronic diseases in the population. There is an urgent need to improve management of these problems, but the longer-term challenge of maintaining good population health in Australia – in the face of demographic and technical developments that strain budgets and other resources – requires radical policy action. The focus must shift from servicing illness with technological quick fixes to the promotion and maintenance of wellness. This requires political will, social action and individual engagement.

An initial plan for action aimed at mainstreaming more integrated approaches to care management is proposed here. However, it is recognised that these developments are only part of the answer to the range of diseases of body and mind that are ubiquitous in Australia and other OECD countries. The paper also outlines a model for a population health system that might, through what have been termed 'the organised efforts of society' (Acheson 1988) stand a chance of stemming the tide. These concepts will be amplified in a further paper on models of integrated care and population health systems that might be applicable and scalable in Australia.

A plan for action

The following list is an initial road map towards integrated health care for mental and physical chronic diseases.

- **Primary Health Networks** (PHNs) can act as catalysts of the future system. Quality and safety standards for PHNs should address greater integration of care for people with complex conditions. Performance expectations should be developed for PHNs consistent with the objectives of the Triple Aim approach. PHNs, acting in partnership with other local and regional agencies, can also act as champions for the development and deployment of a public health workforce focused on primary and secondary prevention. Targets and indicators for population health should guide this process. The AHPC has published a set of targets and indications that can support, guide and track progress towards a substantial change in the health of Australia.[1]
- **Greater integration of mental and physical health** care should be a key ambition locally and nationally. Strategies to create this must be underpinned by comprehensive action by PHNs to engage and work with GPs and primary care providers to develop innovative service models in primary care offering better coordinated and proactive care to people with complex chronic health conditions. Unless the front line is engaged, PHNs will fail in their efforts. Promising integrated interventions, such as the TrueBlue model of collaborative care cited in this report, should be identified and scaled. The APCC methodologies (also discussed herein) have the potential to support front-line clinicians involved in primary care innovation and continuous quality improvement.
- **New approaches to care coordination** between primary care and specialist mental health services are required to support these efforts. In addition, there is an urgent need to develop mechanisms for widespread translation and dissemination of the best evidence in supporting the mental and physical health of people with severe mental illness.
- **There is an urgent need for healthcare funding reform** to enable the delivery of integrated, coordinated care for patients with complex conditions. It is noted that the Federal Department of Health's Primary Care Advisory Group (2015) is reviewing options to establish suitable payment arrangements to support a better primary health care system. This is an important opportunity to develop a funding mechanism or mechanisms that are appropriate to the changing patterns of population health and illness of the 21st

1 McNamara, K, Knight, A, Livingston, M, Kypri, K, Malo, J, Roberts, L, Stanley, S, Grimes, C, Bolam, B, Gooey, M, Daube, M, O'Reilly, S, Colagiuri, S, Peeters, A, Tolhurst, P, Batterham, P, Dunbar, JA & De Courten, M (2015), Targets and indicators for chronic disease prevention in Australia, Australian Health Policy Collaboration technical paper No. 2015-08, AHPC, Melbourne.

century. This may mean the replacement of current fee-for-service payments to clinicians with bundled funding packages that reflect the need for integrated, multidisciplinary and coordinated care. This will be better for patients and more cost effective for health care payers, whether these are governments, health insurance organisations or patients themselves. The AHPC proposes the establishment of an integrated insurance scheme as a key mechanism in a national strategy to develop a chronic disease focused healthcare system in Australia.[2]

- **There is need to invest in and improve the use of health-system informatics** to drive improvements in clinical practice and to nudge health behaviours towards living well. The primary care sector needs to be encouraged to make routine use of data on patient outcomes to facilitate continuous quality improvement and to develop primary health care performance monitoring at regional and system levels. The APCC Program has demonstrated the value of data in continuous quality improvement. The consistent collection of quality data by clinicians should be built into new integrated care models complemented by consistent use of patients' experience and outcome measures. There is a need for a National Minimum Dataset for chronic and complex conditions drawn from general practice, community and Aboriginal health services, allied health and hospital data.
- **Workforce development challenges,** including skills deficits, must be addressed taking forward an integrated health care program. These deficits are located in all clinical arenas but have special impact in primary care, where most people at high risk of chronic illness are managed. There is, in addition, a critical shortage of both people and skills in what might be termed the broad public health workforce, including specialists in health surveillance, disease prevention, infectious disease control, health promotion and health education. Local and regional access to all of these skills is as important as clinical skills if the aim is to keep people healthy, not merely respond to illness.

Finally, it is acknowledged that the role of policy in this area is to set direction and to use funding, contracting and incentives to enforce and support change. However, this change cannot be imposed from above without the active participation and support of the front line. There needs to be recognition of the rationale for change at all levels of the system. Health care organisations, including primary care organisations and hospitals, should reflect on the nature of their business. Is their goal only to treat illness, on a disease by disease basis as now, or through integrated care? Can they envisage working in partnership with other organisations to prevent the avoidable causes of chronic disease, including those which may be exacerbated by health care treatments, amongst the communities that they serve? These are not just rhetorical questions. The answers take us to the core of the puzzle facing every healthcare system in the developed world which is, in effect, how to balance prevention and treatment in the best interests of individuals and society as a whole.

2 Paolucci, F and M García-Goñi (2015). The Case for Change Towards Universal and Sustainable National Health Insurance & Financing for Australia: Enabling the Transition to a Chronic Condition Focussed Health Care System, Australian Health Policy Collaboration Technical paper No. 2015-07. Melbourne: Australian Health Policy Collaboration.

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List of Acronyms

ABS	Australian Bureau of Statistics
AHPC	Australian Health Policy Collaboration
AIDS	Acquired Immune Deficiency Syndrome
AIHW	Australian Institute of Health and Welfare
APCC	Australian Primary Care Collaboratives
BCA	Business Council Australia
COPD	Chronic Obstructive Pulmonary Disease
GP	General Practitioner
HIV	Human Immunodeficiency Virus
IHI	Institute of Healthcare Improvement
NCD	Non-Communicable Disease
NICE	National Institute for Health and Care Excellence
NMHC	National Mental Health Commission
NRHA	National Rural Health Association
OECD	Organisation for Economic Co-operation and Development
PHCG	Publicis Healthcare Communications Group
PHN	Primary Health Network
RANZCP	Royal Australian and New Zealand College of Psychiatrists
SES	Socio-Economic Status
UK	United Kingdom
USA	United States of America
WHO	World Health Organization

1. Introduction

1.1 Overview

This paper makes an initial case for a new health policy framework for Australia which reflects the objectives enunciated in the Triple Aim framework. This has been defined by the Institute of Healthcare Improvement (IHI, USA) as:

- improving the patient experience of care (including quality and satisfaction);
- improving the health of populations; and
- reducing the per capita cost of health care (Berwick et al. 2008).

New policy is required to optimise health system performance to deal better with the changing patterns of ill health in the population and in particular the alarming – and paradoxical – increase in the prevalence of chronic diseases in a population that is broadly healthier and living longer. These chronic conditions are not amenable to quick-fix cures, whether these are one-off visits to a general practitioner (GP), surgical inventions or analgesics. They require long-term management through multidisciplinary and team care approaches and effective partnerships between patients, carers and clinicians, but the health care system still, in the main, attempts to 'cure'. This is no longer appropriate. In order to implement the Triple Aim framework it will be necessary to reorientate healthcare to deliver better prevention and management of chronic disease.

The particular focus of this paper is on what can be done to address increasing levels of multimorbidity, or multiple chronic conditions in the Australian population, including those which are both mental and physical in origin. The complexity of the interactions in the causation and management of chronic disease means that multimorbidity is often poorly managed (Wheeler et al. 2013) and opportunities for prevention are lost (Katon et al. 2010). Implementing the objectives articulated in the Triple Aim framework will be critical if Australia is to respond well to the complex and confounding interactions between mental and physical chronic disease which contribute to the prevalence of multimorbidities (WHO & Calouste Gulbenkian Foundation 2014). These interactions are common and increasing in prevalence, but policy and service models have not yet evolved in ways that enable more effective, integrated responses to treatment and management (Rosenberg & Hickie 2013; Smith et al. 2012) or prevention (Buck & Frosini 2012).

Lack of policy recognition of this bi-directional relationship between mental and physical chronic disease has unplanned consequences for the health of the nation. Current service models, systems and institutions operate within a framework in which mind and body are addressed in isolation from each other. As a result people with multiple diagnoses are treated disease by disease, rather than as whole people living in complex social and emotional contexts with equally complex and interconnected patterns of psychological and physiological distress.

Chronic disease prevention programs also often operate in similar silos, addressing risk factors for chronic physical diseases such as diabetes or cardiovascular diseases without attending to the risks these pose for mental disorders (AIHW 2012). In addition, there is little integrated performance reporting on Australia's progress in preventing chronic diseases (Willcox 2014).

Poor health caused by chronic disease has a myriad of social impacts affecting individual and family functioning (Case et al. 2005, Marmot & Bell 2012), and civic participation (Cattell 2001). There are particularly complex interactions between poor health and educational attainment (Feinstein et al. 2006; Cutler & Lleras-Muney 2007), with evidence of intergenerational transmission of both health and educational effects (Talge et al. 2007). The costs of multimorbidity represent a poor return on public investment in health and other social policies, yet there is significant evidence that at least a proportion of this burden on individuals and the economy can be prevented. It is time to chart a new course towards the integration of policy and services.

1.2 Scope

This paper is one in a series of Australian Health Policy Collaboration (AHPC) publications that aim to make the case for a new policy focus on the prevention and management of the chronic diseases that are an increasing feature of 21st century life. The paper has a specific focus on the requirement for integrated approaches to the secondary prevention and management of complex chronic conditions which frequently involve interactions between physical and mental health. Consideration is given to the extensive evidence of the extremely poor physical health and reduced life expectancy of people with severe mental illnesses, but this is not the primary focus of this paper. It is clear that urgent steps are required to achieve parity of outcomes between people with these conditions and the rest of the population as a matter of priority. The AHPC is working with the Royal College of Australian and New Zealand Psychiatrists to develop collaborative policy proposals in this area.

The literature reviewed briefly in this paper primarily addresses adult health. It does not consider the evidence regarding mental and physical illnesses experienced by children and young people or associated with childbirth, medically unexplained symptoms, the impacts of drug and alcohol consumption on physical health, or dementia and other forms of cognitive impairment. However many of the principles of the Triple Aim Framework are applicable to these groups and conditions.

There is extensive and growing evidence about the prevalence, incidence, causes and consequences of co-existing physical and mental illnesses (Bagnall 2014; Naylor et al. 2012; WHO & Gulbenkian Foundation 2014). Some gaps are noted in relation to the availability of gender and age-disaggregated data about co-morbidities and evidence for prevention, particularly cost of illness and cost-effectiveness data (Knapp et al. 2011). It is clear that there is an urgent need for further investment in research designed to generate the necessary evidence.

1.3 Context

1.3.1 Chronic diseases: a rising tide

Chronic diseases (also referred to as non-communicable diseases – NCDs – or long-term conditions) have replaced infectious diseases and injuries as the major causes of disability and premature death in Australia and other developed countries (National Health Priority Action Council, 2005; WHO 2015). Chronic diseases include a range of conditions that are long-lasting and diminish health status due to disease symptoms, functional impairment, disability, reduction in healthy life expectancy and premature deaths.

Willcox (2015) suggests that the scope of chronic diseases can be defined narrowly or more broadly, depending upon the basis of the classification. Organisations use different groupings of chronic diseases according to whether their focus is preventability of shared risk factors; impact on morbidity and healthy functioning; capacity for improving service delivery and integrating care; or contribution to premature deaths. This paper applies a definition of chronic diseases which includes mental illnesses.

1.3.2 Mental illnesses are chronic diseasese

The terms ‘mental illness’ and ‘mental disorder’ are used to describe a wide spectrum of mental health and behavioural disorders, which can vary in both severity and duration. The most prevalent mental illnesses are depression, anxiety and substance use disorders. Less prevalent but often severe illnesses include schizophrenia, schizoaffective disorder and bipolar disorder (Slade et al. 2009).

From the 2007 National Survey of Mental Health and Wellbeing of adults (aged 16–85) it is estimated that 45 per cent of Australians in this age range (7.3 million people) had experienced a mental disorder sometime

in their lifetime, and that an estimated 20 per cent (3.2 million people) had experienced a common mental disorder in the previous 12 months (Sade et al, 2009). Of these, anxiety disorders (such as social phobia) were the most common, afflicting 14.4 per cent of the population, followed by affective disorders such as depression (6.2 per cent) and substance-use disorders such as alcohol dependence (5.1 per cent). These three groups of common mental disorders were most prevalent in people aged 16–24, and decreased as age increased. Prevalence was higher for women than men across all ages. These figures are reflected in other high-income countries (OECD 2014)

Mental disorders can vary in severity and be episodic in nature. A recent review estimated that 2–3 per cent of Australians (600,000 people) have severe disorders, as judged by diagnosis, intensity and duration of symptoms, and degree of disability (AIHW 2014). This group includes people with psychotic disorders, who represent about one-third of those with severe mental disorders, and people with severe and disabling forms of depression and anxiety. Another 4–6 per cent of the population (around 1 million people) have a moderate disorder and a further 9–12 per cent (approximately 2 million people) a mild disorder (AIHW 2014).

Mental and behavioural disorders such as depression, anxiety and drug use are important drivers of disability (AIHW 2014). For example, mental and behavioural disorders were estimated to be responsible for 13 per cent of the total burden of disease in Australia in 2003, placing it third as a broad disease group after cancers and cardiovascular disease (Begg et al. 2008). In addition, in 2013, 31.2 per cent of people in receipt of the Disability Support Pension had a primary medical condition of 'psychological/psychiatric' (AIHW 2014).

Mental illnesses meet the criteria for chronicity. In addition mental illnesses are highly associated with co-morbid physical illnesses and with a much reduced life expectancy. These linkages are evident irrespective of whether the focus is on the needs of the population with severe mental illness who experience the most multimorbidity and premature mortality (Morgan et al. 2012) or on the populations with chronic physical illnesses (Begg et al. 2008; Naylor et al. 2012). Multimorbidities are poorly addressed by current health policies and systems and are major drivers of a range of direct and indirect costs to the economy and society (Begg et al. 2008). Evidence is accumulating about the value of better prevention and management of chronic disease, including the interactions between mental and physical illness, to individuals, communities and to the economy (Knapp et al. 2011).

2. Multimorbidity is Common

2.1 Mental health consequences of chronic physical ill health

People with chronic ill health are two to three times more likely to experience mental health problems than the general population (Cimpean & Drake 2011). Much of this evidence relates to affective disorders such as depression or anxiety (Sheehy et al. 2009) although co-morbidities are also common in dementia, cognitive decline and other conditions (Naylor et al. 2012). There is particularly strong evidence for a close association between cardiovascular diseases (Fenton & Stover 2006; Goodwin et al. 2009), diabetes (Fenton & Stover 2006), chronic obstructive pulmonary disease (Livermore et al. 2010; NICE 2009) and musculoskeletal disorders (Sheehy et al. 2006). There is also evidence of extensive mental health problems amongst people with a range of other conditions including asthma, cancer, arthritis and HIV/AIDS (Naylor et al. 2012). Chronic diseases are risk factors for the development of cognitive impairment as well as Alzheimer's disease and vascular dementia (Biessels 2013; Xu et al. 2008). Moreover, the presence of co-morbid depression or anxiety and diabetes renders an individual at much higher risk of developing dementia (Roberts et al. 2012). In addition co-morbid mental health problems are exacerbated if people have multiple, long-term physical illnesses (Gunn et al. 2010). Gunn et al's study is particularly interesting in that it suggests that the number of conditions, or multimorbidity, is more predictive of depression than the presence of any particular health condition.

Box 1 below describes some of the common clusters of coexisting mental health problems in people with a chronic physical disease

BOX 1: Research evidence on the prevalence of co-morbid mental health problems and cardiovascular disease, diabetes, COPD and chronic musculoskeletal disorders

- Depression is two or three times more common in combination with cardiovascular diseases including cardiac disease, coronary artery disease, stroke and congestive heart failure, and following a heart attack (Fenton & Stover 2006; Gunn et al. 2010; Welch et al. 2009). Prevalence estimates vary from 20–50 per cent depending on the condition studied and the assessment approach used, but the two to threefold increase compared with controls is consistent across studies. Anxiety problems are also common in cardiovascular disease sufferers (Goodwin et al. 2009).
- People living with diabetes are two to three times more likely to have depression than members of the general population (Fenton & Stover 2006). As observed for cardiovascular disease, prevalence estimates vary but the relative risk is consistent (Anderson et al. 2001). There is also an independent association between diabetes and anxiety.
- Mental health problems are around three times more prevalent among people with chronic obstructive pulmonary disease (COPD) than the general population (NICE 2009). Anxiety disorders are particularly common; for example panic disorder is up to ten-times more prevalent than in the general population (Livermore et al. 2010).
- Depression is common in people with chronic musculoskeletal disorders (Sheehy et al. 2006). Up to 33 per cent of women and more than 20 per cent of men with all types of arthritis have co-morbid depression (Theis et al. 2007). For example, more than one in five people over the age of 55 with chronic arthritis of the knee have been reported to have co-morbid depression (Sale et al. 2008).

2.2 Physical health consequences of chronic or acute mental illness

The mental health consequences of chronic physical disease are mirrored in extremely poor physical health outcomes experienced by people with severe mental illnesses. National and international studies report the prevalence of multimorbidity in the population living with psychiatric disorders. According to the 2010 Australian 2nd National Survey of Psychotic Illness, over one-quarter (26.8 per cent) of survey participants had heart or circulatory conditions and one-fifth (20.5 per cent) had diabetes (Morgan et al. 2012). The prevalence of diabetes amongst this group is more than three times the rate seen in the general population. The mortality rate from physical illness amongst people living with mental illness is significantly higher than in the general population (Lawrence et al. 2013). Schizophrenia is generally acknowledged as a life-shortening illness, with sufferers dying on average 10 years earlier than the general population; two thirds of this excess mortality is due to poor physical health (Lawrence et al. 2013). Australian figures are mirrored in recent studies in other high-income countries, and the conclusions across multiple peer-reviewed studies are broadly similar. Moreover, these illnesses develop at a younger age and kill people early, with five-year survival rates reduced by up to 16 per cent compared with the general population (Disability Rights Commission. 2006).

Box 2 below describes some of the common clusters of physical health problems found in people with severe mental illnesses.

BOX 2: Research evidence on the prevalence of physical health problems in people with schizophrenia and bipolar disorder

- Rates of ischaemic heart disease, stroke, high blood pressure and diabetes are higher than in the general population, with diabetes two to three times more common.
- Increased mortality rates from cardiovascular disease in people with severe mental illness is a robust finding even when smoking rates and deprivation are taken into account.
- Similarly, a clear link between depression and cardiovascular disease has been established.
- Bowel cancer is 90 per cent more likely in someone with schizophrenia and women with schizophrenia are 42 per cent more likely than other women to be diagnosed with breast cancer.
- Mentally ill people aged 25 to 44 have more than six times higher cardiovascular mortality than the age-matched general population (Saha, Chant & McGrath, 2007).

These figures exclude those for older adults with dementia. It is acknowledged that the incidence of chronic physical illness increases with age and that good mental health is protective against chronic diseases in older people (Dainese et al. 2011). The increasing proportion of older people in the Australian population and increasing life expectancy strengthens the already compelling case for an integrated preventative approach to chronic diseases of both body and mind which will enable as many people as possible to live well into older age.

2.3 Multimorbidity in Australia

About 12 per cent of the Australian population are estimated to have both a mental disorder and a chronic condition (AIHW, 2007). Women are 1.6 times more likely to have co-existing physical and mental health conditions than men. The gendered distribution of comorbidity is set out in Table 1 below.

TABLE 1: Summary of mental health and physical condition comorbidity

	Men		Women		Persons	
Group Median	**%**	**age**	**%**	**age**	**%**	**age**
No lifetime mental disorder	51.9	44	57.1	47	54.5	45
Any lifetime mental disorder	48.1	42	42.9	41	45.5	41
Any 12-month mental disorder	17.6	38	22.3	37	20.0	37
Comorbidity of 12-month mental disorder and physical condition	8.9	42	14.5	42	11.7	42
All persons aged 16-85	**100**	**43**	**100**	**43**	**100**	**43**

Source: AIHW analysis of National Survey of Mental Health and Wellbeing 2007

Of the main groups of mental disorders (as classified by the ABS), the highest rate of co-morbidity with a physical condition is for anxiety disorders, affecting an estimated 1.4 million Australians. This combination was more than twice as common amongst women as men. The most common serious physical conditions co-existing with any mental disorder were rheumatism, arthritis and gout, affecting 455,000 Australians. These combinations were almost twice as common amongst women as men. The prevalences of common clusters of mental and physical comorbidities are set out in Table 2 below.

TABLE 1: Summary of mental health and physical condition comorbidity

Comorbidity	**Males**	**Females**	**Persons**	**Males**	**Females**	**Persons**
		('000)			**Per cent**	
Affective disorder, any physical condition	249	395	644	3.1	4.9	4.0
Anxiety disorder, any physical condition	456	966	1,422	5.7	12.0	8.9
Substance use disorder, any physical condition	255	149	404	3.2	1.8	2.5
Arthritis, rheumatism or gout, any mental disorder	155	301	455	1.9	3.7	2.8
Asthma, any mental disorder	139	257	396	1.7	3.2	2.5
Cancer, any mental disorder	40	51	91	0.5	0.6	0.6
Diabetes, any mental disorder	58	82	140	0.7	1.0	0.9
Heart problem, any mental disorder	167	224	391	2.1	2.8	2.4
Stroke, any mental disorder	12	15	27	0.1	0.2	0.2

Source: AIHW analysis of National Survey of Mental Health and Wellbeing 2007

3. Understanding the Link Between Mental and Physical Health

The mechanisms underlying the relationship between mental and physical health are not completely understood. Evidence suggests that a combination of biological, psychosocial, environmental and behavioural factors is involved (Prince et al. 2007). Multiple causal factors interact together at an individual and at a population level to determine the degree of disease burden, and unhealthy risks can be passed on through families, communities, and populations. In addition to genetic factors, at different life stages common risk factors and determinants include poor intrauterine conditions; stress, violence and traumatic experiences; educational disadvantage; inadequate living environments that fail to promote healthy lifestyles; poor diet and lack of exercise; alcohol misuse and tobacco smoking (WHO 2012).

3.1 Impact of deprivation and adversity

There is a considerable body of literature which suggests that adverse life events are implicated in the onset of mental disorders and other chronic ill-health factors. Some individuals are subject to multiple social risk factors which overwhelm their ability to cope (Figueroa-Fankhanel et al. 2014). There are indications in the literature that women are more affected by adversity than men (WHO 2000). Exposure to adverse events in childhood is strongly associated with adult mental illnesses and co-morbidities (Case et al. 2005).

3.2 Risk behaviours

Mental ill health is often characterised by fatalism and lack of motivation. Disorganised lifestyles and risky behaviours can be exhibited, particularly by people with severe and enduring mental illnesses, but are also associated with common mental disorders including depression and anxiety. These factors mean that people do not seek medical screening and advice, do not receive regular monitoring whilst using psychoactive medications and use tobacco, alcohol and drugs excessively (Naylor et al. 2012). These behaviours are also risk factors for chronic physical diseases including obesity, diabetes and cancers. People with multimorbidities are more likely to experience polypharmacy – treatment with several different drugs (Fortin et al. 2007). This is known to create problems with adherence to drug regimens due to side effects that decrease quality of life and increase disorganisation and costs (Fortin et al. 2005; Townsend et al. 2003).

Australian data (see Box 3 below) suggest that disease risk factors are generally more prevalent amongst people with multimorbidities and are particularly high amongst those with mental disorders (AIHW 2007). It is important to note that this does not imply a direct, linear causal pathway between behaviours and the presence of any chronic disease.

BOX 3: Multimorbidity and risk behaviour

- Both men and women with multimorbidities have highest rates of smoking in the population although the proportion of men who smoke is slightly greater than women in this group. Men with multimorbidity have a higher rate of risky drinking than women
- Obesity is more prevalent amongst women in all population groups, including the multimorbid group (AIHW 2007)

3.3 Impacts of treatment

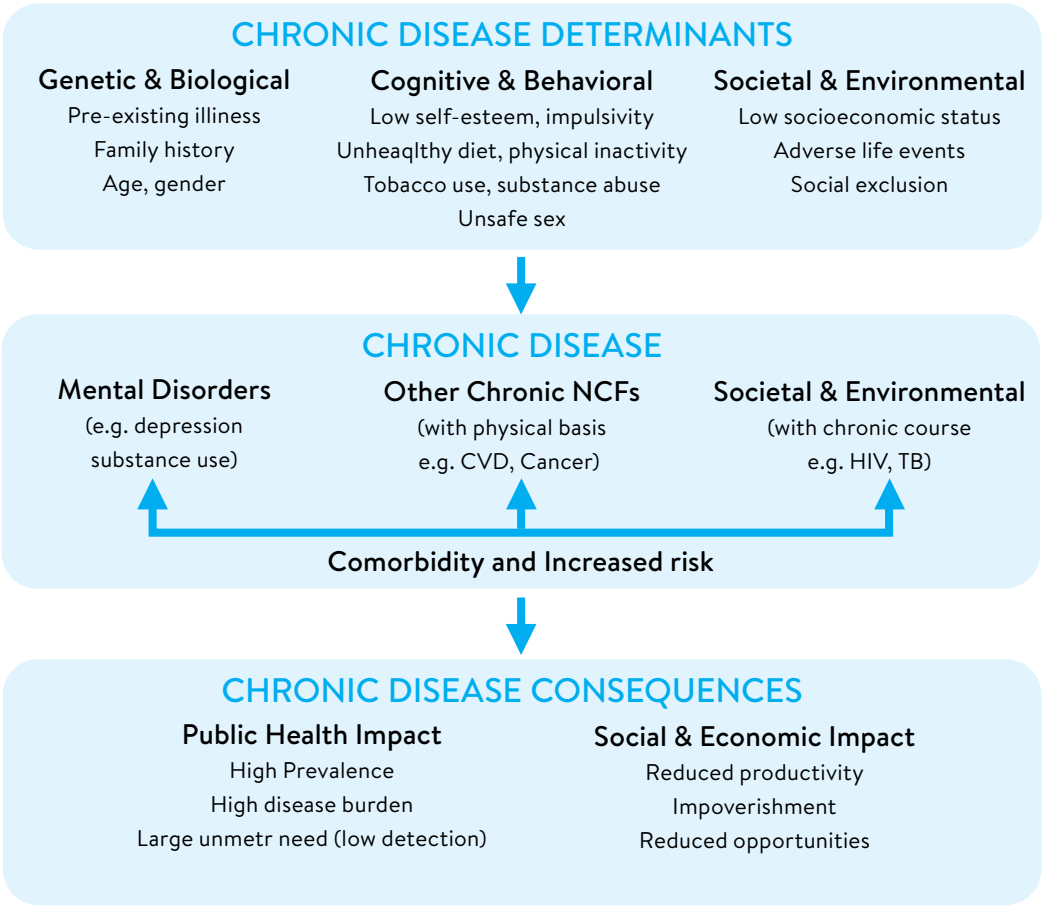
Some treatments for mental illness are implicated in causing or worsening physical ill health. People on long-term anti-psychotic medicine, for example, can experience a range of metabolic disorders including weight gain, dyslipidaemia (elevated cholesterol) and diabetes (Nasrallah et al. 2006).

3.4 Stigma and discrimination

Causal factors are compounded by widespread discrimination. There is evidence from recent reviews that people with psychosis receive sub-optimal health care despite being at high risk for serious physical disorders (De Hert et al. 2011; Rethink 2013). In this context, it is unsurprising that people with mental illnesses find it difficult to seek clinical and other forms of support for their multiple health needs. An Australian study found that only 35 per cent of people with a mental disorder in the 12 months prior to the survey had sought help for a mental health problem during that year, and most had seen a general practitioner. Only half of those who were disabled or had multimorbidities had sought help. This study suggests that the low rate of seeking help among those with multimorbidity is a significant public health problem (Lawrence et al. 2014). Other evidence shows that timely and effective treatment is effective in improving health (Kilbourne et al. 2008). The literature strongly implicates negative and discriminatory attitudes of health care staff in primary and secondary care and specialist settings as inhibitors of help-seeking by people with mental illnesses and associated physical health needs (De Hert et al. 2011b).

The WHO has outlined the nature of the links between mental illnesses and other chronic diseases, as illustrated in Figure 1 below.

FIGURE 1: Determinants of mental illness and other chronic diseases



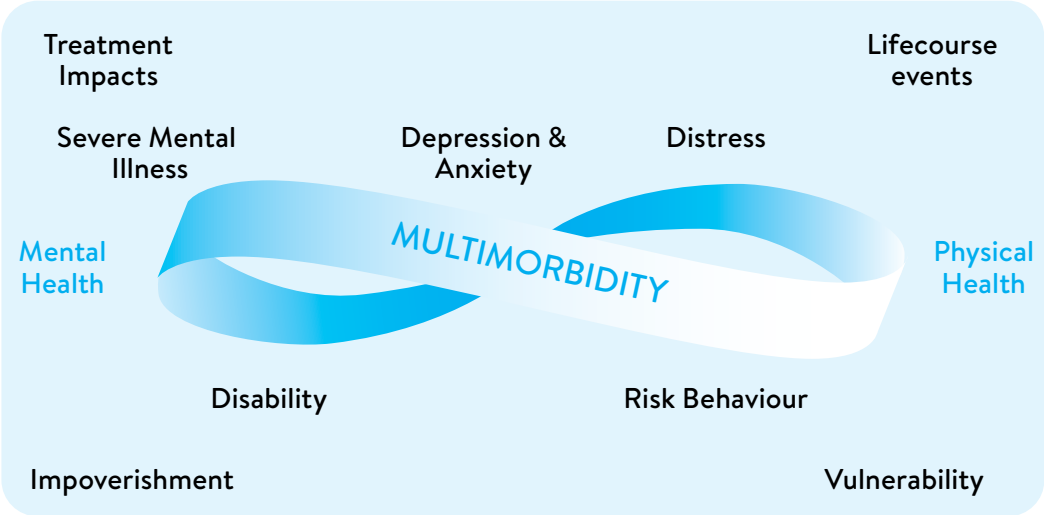
Source: Modified from WHO & Gulbenkian Foundation, 2014

3.5 A two-way relationship

Mental and physical ill health interacts in the creation of co-morbidities, with each being a risk factor for the other. There is strong evidence about the negative impact of mental health problems for people who already have chronic physical conditions, and there is equally strong evidence that having a mental health problem (including depression or anxiety disorders) increases the risk of onset of a range of physical illnesses (De Hert et al. 2011a). For example, a review found that depression increases the risk of coronary artery disease and ischaemic heart disease by 50–100 per cent (Benton et al. 2007). Similarly, a growing evidence base suggests that chronic stress has a direct impact on the cardiovascular, nervous and immune systems, leading to increased susceptibility to a range of diseases (Contrada & Baum, 2010). As a result of these associations, people with mental health problems are two to four times more likely to die prematurely, principally from avoidable, health causes such as cardiovascular disease (Eaton et al. 2008).

The complex feedback loop between mind, body and the external environment is illustrated in Figure 2 below.

FIGURE 2: Multimorbidity feedback loop



3.6 Which populations experience most multimorbidity?

3.6.1 Low socio-economic status

There is strong evidence of a socio-economic gradient in the incidence of multimorbidity. Onset of multimorbidity occurs 10 to 15 years earlier amongst people living in the most deprived areas than those living in the least deprived areas (Barnett et al. 2012). People living in the areas of Australia with the lowest socio-economic status (SES) were 65 per cent more likely to have concurrent chronic diseases than those living in areas with the highest SES.

3.6.2 Aboriginal and Torres Strait Islander population groups

Whilst data on multimorbidities are not readily available there is evidence of high levels of psychological distress amongst Aboriginal people and Torres Strait Islander population groups, who are more than twice as likely to report poor mental health as the rest of the population (Hill et al. 2007). Those reporting high levels of psychological distress have poorer physical health outcomes (Hill et al. 2007). It is estimated that potentially avoidable deaths amongst Aborigines and Torres Strait Islanders is over three times higher than for non-indigenous Australians, and chronic diseases are major contributors to this burden (ABS 2012).

4. The Consequences of Multimorbidity

Multimorbidities have serious implications including poorer clinical outcomes, lower quality of life and reduced ability to manage physical symptoms effectively (Bagnall 2014; Naylor et al. 2012).

4.1 Poorer clinical outcomes and prognosis

Outcomes from cardiovascular care are poorer for patients with co-existing mental health problems, even after taking severity of cardiovascular disease and patient age into account.

Box 4 below sets out some of the emerging evidence about the consequences of multimorbidity for clinical outcomes

BOX 4: Evidence about the impact of multimorbidity on clinical outcomes

- Cardiovascular patients with depression experience 50 per cent more acute exacerbations per year and have higher mortality rates (Whooley et al. 2008).
- One meta-analysis suggested that depression leads to a two to threefold increase in negative outcomes for people with acute coronary disease (Barth et al. 2004).
- Patients with chronic heart failure are eight times more likely to die within 30 months if they have depression (Junger et al. 2005).
- People with diabetes who also have co-morbid mental health problems have poorer health outcomes and greater risk of premature mortality. Katon et al. (2010) reported that people with diabetes and co-morbid depression have 36–38 per cent greater risk of all-cause mortality over a two-year follow-up period.
- Mental health problems can exacerbate symptoms and outcomes for people with COPD independent of COPD severity. Co-morbid mental disorders are associated with worse health status and breathlessness (Felker et al. 2010).
- A recent analysis of primary care records in the United Kingdom reported that the mortality rate for individuals with co-morbid asthma and depression was twice that among those with asthma alone (Walters et al. 2011).

4.1.1 Quality of life

People with both mental and physical morbidities have much worse quality of life than people with two or more physical health problems (Moussavi et al. 2007). Australian data records people with two or more physical disorders as having high or very high levels of psychological distress compared with the rest of the population, with women with physical conditions reporting a higher prevalence of high psychological distress than men (AIHW 2007). Moreover, people with two or more health conditions were about twice as likely to have had seven of the last 30 days 'out of role' due to their health (AIHW 2007).

The World Mental Health Survey reports that mental disorders are associated with higher levels of individual-level disability than any of the wide variety of commonly occurring physical disorders examined in parallel surveys, including arthritis, asthma, cancer, diabetes and heart disease. Co-morbid mental health problems can exacerbate functional disability (Moussavi et al. 2007). Some studies indicate that mental and physical health problems in association can have a greater effect on functional status and quality of life than the

levels of severity of any physical illness (Yohannes et al. 2010). It may be that a significant part of the reason for these poorer outcomes is that a co-existing mental health problem reduces a person's ability to actively manage their own condition (Di Matteo et al. 2000; Naylor et al. 2012).

4.1.2 Life expectancy

The high rate of multimorbidity among people with mental illness is associated with a far shorter life expectancy in all developed countries, with some estimates suggesting that the lives of both men and women with severe mental illness are up to 30 per cent shorter than those of the general population (Colton & Manderscheid 2006). Over 80 per cent of this premature death is associated with physical illness and is potentially avoidable (Lawrence et al. 2013).

In Western Australia, which has amongst the highest life expectancy in the world, research has indicated that between 1985 and 2005 the gap in life expectancy for people with psychiatric disorders increased from 13.5 years to 15.9 years for men and from 10.4 years to 12.0 years for women (Lawrence et al. 2013). The authors of this paper argue that this life expectancy gap is worse than for other disadvantaged groups, citing as examples lifelong smokers, who receive considerable public health attention and intervention, where the corresponding gap is about 10 years (Doll et al. 2004).

A recent report by the Royal Australian and New Zealand College of Psychiatrists drew on extensive evidence to outline the seriousness of this problem and called for systemic, collaborative action between psychiatrists, other health disciplines, the pharmaceutical industry and governments to reverse "the culture of endemic low aspirations and system fragmentation" that contributes to these poor outcomes (RANZCP 2015). These proposals are totally aligned to the principles of the Triple Aim Framework.

4.2 Costs of multimorbidity

4.2.1 Health services

Chronic diseases increase societal and economic costs. Lack of prevention and poor outcomes from treatment drive increasing heath care costs and lost productivity (Mental Health Commission 2014). The economic costs of multimorbidities are driven up by increased use of services, including hospital admissions and re-admissions (AIHW 2007, 2008) and GP consultations (AIHW 2008). The interactions between physical and mental illnesses significantly increase the costs of care and treatment. Melek (2008) demonstrated that people with depression and a chronic physical illness incurred average monthly care costs that were 33–169 per cent higher over a range of conditions. These increased costs excluded direct expenditure on mental health services. Moreover, the strong association between poor mental health and increased costs of care and treatment is broadly consistent across all levels of medical severity and persists even when adjusted for clinical and demographic variables (Unützer et al. 2009; Welch et al. 2009). There are, in addition, well documented wider, negative impacts of multimorbidity on family functioning, standard of living, child development and educational attainment (Talge et al. 2007).

The important point to take from the data regarding the costs of treating co-morbid mental and physical illness is that in the current system, the costs of treating co-existing mental and physical conditions are significantly greater than the costs of having the physical conditions alone (Unutzer et al. 2009). More data is available for the costs of multimorbid illnesses in people with lower prevalence or severe mental illnesses. The AHPC and the Victorian Institute of Strategic Economic Studies have recently estimated the direct and indirect economic costs incurred by individuals, carers, government and others in addressing serious mental illness and associated physical illnesses (Sweeney & Shi 2015). The authors suggest that multimorbidities inflate the costs of severe mental illness hugely (Sweeney & Shi 2015), estimating the additional cost at $45 billion.

4.2.2 Reduced productivity

Substantial and growing costs to health systems are compounded by wider societal and economic costs. Compared with employed people, those not in the labour force are nearly 70 per cent more likely to have multimorbidity, and those who are unemployed are 45 per cent more likely to have multimorbidity (AIHW 2012).

People with chronic diseases who are in work are likely to be less productive, through 'presenteeism' and more absenteeism. Productivity is also lost through premature death (Productivity Commission 2007). The OECD (2014) suggests that the direct financial impact of mental illness on Australian businesses is in the vicinity of $5.5 billion a year, largely due to absenteeism and reduced productivity.

The overall loss to the workforce associated with multimorbidity is unknown. Overall, it is estimated that losses in productivity from chronic diseases amounts to around half a million person-years per annum (AIHW, 2009). This is likely to be an underestimate given the limitations of routinely collected data that includes assessments of impacts from multimorbidity.

4.2.3 Welfare dependency and impoverishment

A recent modelling exercise focusing on welfare dependency and poverty amongst 45–64-year-old Australians estimated that people with multiple chronic conditions experience drastically lower incomes and receive up to 2000 per cent more in transfer payments from government than those with no health conditions (Schofield et al. 2013).

Table 3 below sets out data about the cumulative impact of multimorbidity on unemployment

TABLE 3: Number of health conditions by condition type – limited to 45–64-year-old population not in the labour force for any reason

Main health condition	Percentage with 1 or more chronic health conditions			
	1	2	3	4+
High cholesterol	60	14	18	8
Asthma	35	32	16	18
Cancer	33	10	28	28
Arthritis and related disorders	29	28	17	26
Back problems	25	18	21	36
Diabetes	20	20	40	20
Depression	20	17	33	30
Mental and behavioural disorders	19	21	21	39
Heart diseases	14	26	16	44
Diseases of the respiratory system	7	10	21	62

Source: Schofield at al. 2009

In this context, it is clear that finding better ways of using scarce resources to prevent and treat multimorbidities is not only a moral or a clinical imperative but an economic one.

5. What Works? Evidence for Integration

Effectiveness data in this area is accumulating, but more is required. There are, in particular, gaps in relation to cost-effectiveness data on the primary and secondary prevention of multimorbidity.

5.1 Seeds of the future: service-level interventions

There is already some strong evidence that supporting the psychological and mental health needs of people with chronic conditions more effectively can improve both mental and physical health. For example addressing the psychological needs of people with diabetes can improve clinical outcomes, quality of life, relationships with healthcare professionals and carers, dietary control and overall prognosis. This can also reduce the excess costs associated with co-morbidity (Katon et al. 2008).

Existing health care services often fail to realise these opportunities. Naylor (2012) suggested that "the separation of mental and physical health is hard wired into institutional arrangements, payment systems and professional training curricula" (Naylor et al. p 12). As a result, co-morbid mental health problems are often undetected among people with chronic physical conditions (Bagnall 2013). Where mental health problems are detected the support provided is often not coordinated with care provided for physical problems (Bagnall 2013).

A recent systematic review suggests that interventions are likely to be more effective if targeted at risk factors or specific functional needs. Smith et al. (2012) stated that "a need exists to clearly identify people with multimorbidities and develop cost-effective and specifically targeted interventions that can improve health outcomes" (p.13). However, this proactive approach is still a fringe activity in Australia. Several innovations could be the seeds of the future system. These clinical and cost-effective innovations, illustrated in Boxes 5–7 below, exhibit the characteristics of proactive identification, screening and bespoke support Smith and colleagues described.

BOX 5: The TrueBlue model of collaborative care, Australia

This study, involving 11 general practices in the Northern Rivers area of New South Wales and in Adelaide, South Australia, used practice nurses as case managers with people with depression, type II diabetes, coronary heart disease or combinations of these conditions. The intervention used a proactive approach to identifying, screening and monitoring patients and supporting lifestyle change goals and priorities. Participants in the program showed "TrueBlue participants showed significantly improved depression and treatment intensification, sustained over 12 months of intervention and reduced 10-year cardiovascular disease risk. Collaborative care using practice nurses appears to be an effective primary care intervention." (Morgan et al. 2013 p.1.

Integrated interventions are also demonstrating positive impacts on clinical and quality of life outcomes for people with physical illnesses and severe mental illnesses (Meehan et al. 2010; Sederer et al. 2006). Some of this evidence implicates the vital role of non-healthcare agencies such as housing, community and other support services in collaborative approaches (Rosenberg & Hickie 2013). These interventions, which "exploit the synergies between mental and physical health care" (Naylor et al. 2012 p.14) are particularly interesting as they are beginning to move beyond a narrow focus on service integration to system integration.

BOX 6: The Kia Kaha Program New Zealand

This program in Christchurch, New Zealand, works with patients with poorly managed chronic conditions to improve self-management. A large proportion of service users have high psychological distress and high levels of complexity. The program has the ambitious target of achieving a 25 per cent reduction in overall hospital and GP utilisation and engaging individuals with chronic diseases and co-existing severe mental health and addiction needs. The program meets these needs by building the self-management skills of these individuals and their familial and social networks. The program employs flexible peer supporters and outreach methods and is supported by a consultant psychiatrist based in the primary care setting. In 2013, the program achieved a 45 per cent reduction in use of emergency services by enrolled participants and a 25 per cent reduction in GP consultations, as well as significant reductions in symptoms of generalised anxiety and depression (Codyre 2014).

BOX 7: Evidence-based interventions: chronic disease impacts of severe mental illnesses

- Combining the anti-depressant bupropion with cognitive behavioral therapy and nicotine replacement can help people with first-episode psychosis to quit smoking (Ziedonis & Williams 2003).
- Combining psycho-education and nutrition or exercise counselling appears to be a cost-effective way to help people with first-episode psychosis to manage their weight (Bolger et al. 2014.
- A validated healthy lifestyle program appears cost effective as a means of managing body mass index in people who have been living with schizophrenia (Knapp & Iemmi, 2014).
- Collaborative care delivered in primary care settings involving multiple interventions to people with comorbidities can be cost effective, notwithstanding initial investment in service redesign (Bodenheimer 2008; McGorry et al. 2007; Sederer et al. 2006).

5.2 Barriers to integration

5.2.1 Business as usual

The Australian health system has made a major contribution to the increasing life expectancy of the Australian population (However, this increasing life expectancy is not necessarily being accompanied by better health for all and may not be sustainable. Some groups are being left behind; these include Aboriginal and Torres Strait Islanders (ABS 2013b), people from culturally and linguistically diverse communities (AIHW 2006), rural and remote residents (NRHA 2015), people in living in areas of multiple deprivation (ABS 2008) and people with severe mental illnesses (Lawrence et al. 2013). Some people experience all of these risk factors, effectively placing them in double or triple jeopardy with regard to poor health and premature mortality (ABS 2013a; ABS 2013b). The impact of multimorbid chronic disease has the potential to overwhelm the capacity of current health system without bold, corrective action (OECD 2011).

Australia's health services and funding arrangements are still predominantly structured as they were throughout the 20th century and thus, necessarily, carry on 'business as usual' notwithstanding the fundamentally transformed epidemiological landscape in which they function.

Health systems are, in the main:

- focused on hospital services, family and specialist medical practitioner services and community-based health care services;
- responding to acute and life-threatening illness and trauma, on preventing and managing infectious disease; and
- applying emerging surgical and medical technologies to illness and disability treatment and management (Willcox 2014).

They lean towards a worldview that primarily focuses on individual patients and their needs (Noble et al. 2014), with patients as the unit of intervention rather than whole populations and, as the evidence discussed above reveals, one condition at a time. Whilst individual care and treatment will always be necessary, it is no longer sufficient to respond to chronic diseases and in particular to reverse current trends in the prevalence of chronic diseases of all kinds. In this context, it is logical to suggest that effort should be focused as much as possible on the prevention or delaying of chronic diseases for as long as possible. This means, primarily, new ways of working in health services for everyone and in particular the bridging of a range of current gaps, including the fault lines between mental and physical health and between health services and what has been termed 'public health' – in other words, between interventionist clinicians working in primary care and secondary health services and experts in prevention. This is the health system paradigm required in the 21st century.

5.2.2 Healthcare funding

Healthcare funding reflects the legacy of former times and former challenges. Medicare, for example, was designed as a public insurance mechanism to manage one-off or episodic illnesses, and its core features have not changed to address multimorbid chronic disease which requires continuing, integrated, coordinated care. This incurs unnecessary costs as each intervention is accompanied by a fee for service. It is also inefficient and ensures that patients experience a fragmented system, with services and providers working in isolation from each other, lack of continuity of care and treatment, and both wasteful duplication and gaps in services. These structural barriers militate against good outcomes for people with complex conditions who require proactive, long-term, coordinated, evidence-based management and team care. These interventions need bundled packages of funding to incentivise and reward practice change.

5.2.3 Health informatics

Other challenges flow from this including low uptake of *eHealth* and other health technologies to overcome the barriers and lack of routine data collection and analysis to monitor outcomes, review performance and target interventions and funding (PHCG 2015). It is notable that **Australia does not yet have a minimum data set for chronic diseases** (PHCG 2015).

5.2.4 Lack of investment in prevention

The relatively low level of investment in prevention and treatment of chronic diseases in Australia ensures that there is little preventative capacity in the current system (Willcox 2014). Public health spending was about 1.8 to 2.0 per cent of total recurrent health spending from the late 1990s to the mid-2000s (AIHW 2014). Public health spending peaked at 2.22 per cent of total recurrent health spending in 2007–08, but has declined significantly since. In 2012-13, spending on public health was only 1.54 per cent of total recurrent health spending. This indicates that spending on public health (and hence prevention) has been given progressively lower priority in Australia than spending on health service delivery. Comparative OECD data shows that that Australia is at the low end in spending on prevention and public health services compared with other countries including New Zealand (6.4 per cent), Finland (6.1 per cent), Canada (5.9 per cent), Sweden (3.9 per cent), the United States (3.1 per cent) and Japan (2.9 per cent) (OECD 2011).

5.2.5 Lack of parity of esteem for mental heath

There is, additionally, extensive evidence about the low priority accorded to mental disorders compared with physical disorders in policy and both generalist and specialist settings. This relates in part to funding. Investment in mental health services of all kinds has lagged behind investment in physical health. The Royal Australian and New Zealand College of Psychiatrists (RANZCP) has drawn attention to the discrepancy between the burden of mental illnesses in the population (33 per cent) and the fact that it receives only 8 per cent of the treatment budget and 3per cent of the research budget (RANZCP 2010). There have been calls for funding for mental health to be increased to 12 per cent by 2020 (McGorry 2011). However, whilst the level of funding is important, it is how the available funding is deployed that will be critical in implementing change.

In addition, more insidious factors appear to have relevance here. These include the well-documented phenomenon arising from service fragmentation, which means that people with both mental and physical illness can fall through the gaps between physical and mental health systems (RANZCP 2015). When consumers with mental illness report physical health symptoms, all too often they are not addressed because clinicians focus on mental illness to the exclusion of other health problems or symptoms, a phenomenon called “diagnostic overshadowing” (De Hert et al. 2011a). Furthermore, some psychiatrists and others working in the mental health field do not recognise the treatment of physical symptoms as a key part of their role (De Hert at al. 2011b). Conversely, other doctors and clinicians don’t feel confident to manage physical health problems in people with mental illness. The result is that people with multimorbidities can miss out on essential health care services altogether (Bagnall 2014).

This is particularly true for people with severe mental illnesses; the literature suggests that the attitudes of health-care staff in both primary and secondary care as well as in specialist settings inhibit help-seeking by people in relation to physical health needs (De Hert et al. 2011b). One UK audit of physical health monitoring for people with serious mental illness found that a significant proportion of GP surgeries refused to cooperate when asked to undertake screening of patients who had been in the care of specialist mental health services for more than one month (Vasudev & Martindale 2010). Other research points to disparities in the level of health care delivered to people with and without severe mental and physical illnesses. Inequalities were most evident in relation to general medicine and cardiovascular care, but were also present in cancer and diabetes care: the data show similar prevalence but poorer outcomes in people with severe mental and physical illnesses (Mitchell et al. 2012).

6. Beyond the Fragments

International evidence suggests that, in OECD countries, a shift is beginning to take place which will, in time, move current fragmented systems towards greater integration – and beyond this towards population health (Alderwick et al. 2015). The Triple Aim framework has been an important influence on this development, but the shift is occurring primarily because there are compelling demographic, clinical, economic and technological drivers. This process needs to be accelerated in Australia in two complementary ways.

6.1 Primary care in the driving seat

The 'seeds of the future' cited in this paper and in other evidence highlight the characteristics of effective integrated services. These include recognising the key coordinating role of general practices through:

- the enrollment of an identified population;
- proactive management of conditions, including screening, medications management and support with self-management and lifestyle change;
- treatment of both physical and mental health conditions;
- team-based coordinated care and defined patient pathways; and
- regular monitoring and review.

At issue is how to scale models with these characteristics so that they move from the margins to the mainstream in ways that can rapidly begin to address multimorbidities. The IHI suggests that for this to occur at scale there needs to be an 'integrator' organisation that accepts responsibly for the overall health of the population. Primary Health Networks (PHNs) may have the potential to act as integrator organisations, developing new service models in primary care and working with Hospital Networks to develop patient pathways for complex chronic conditions.

PHNs are new Australian primary health care organisations established 'with the key objectives of increasing the efficiency and effectiveness of medical services for patients, particularly those at risk of poor health outcomes, and improving coordination of care to ensure patients receive the right care in the right place at the right time. (Department of Health 2015) and are well positioned to act as integrator organisations in Australia. The recent Review of Mental Health Services and Funding by the National Mental Health Commission (NMHC) similarly calls for the establishment of new 'system architecture' to provide 'stepped care' or coordinated pathways of treatment and care which can respond to fluctuating levels of need and functional impairment (NMHC 2014). A fundamental element of the stepped care approach is the delivery of care through general practice and the primary health sector. The Review also identified the potentially important role of PHNs in supporting new models of primary-care-based support for people with mental illnesses, and suggested that these should be renamed Primary and Mental Health Networks and provided with bundled funding for planning and purchasing mental health services and developing integrated, stepped-care care pathways that are tailored to individual needs and different communities (NMHC 2014).

Primary Health Networks may fail to achieve their potential without deliberate strategies to move beyond narrow interpretations of integration where the fundamental unit of intervention is individual patients, to a broader focus on population health. International case studies, including that of Kaiser Permanente, summarised in an important recent report by the Kings Fund (Alderwick et al. 2015) suggest that this requires a profound shift at three broad levels: macro, meso and micro.

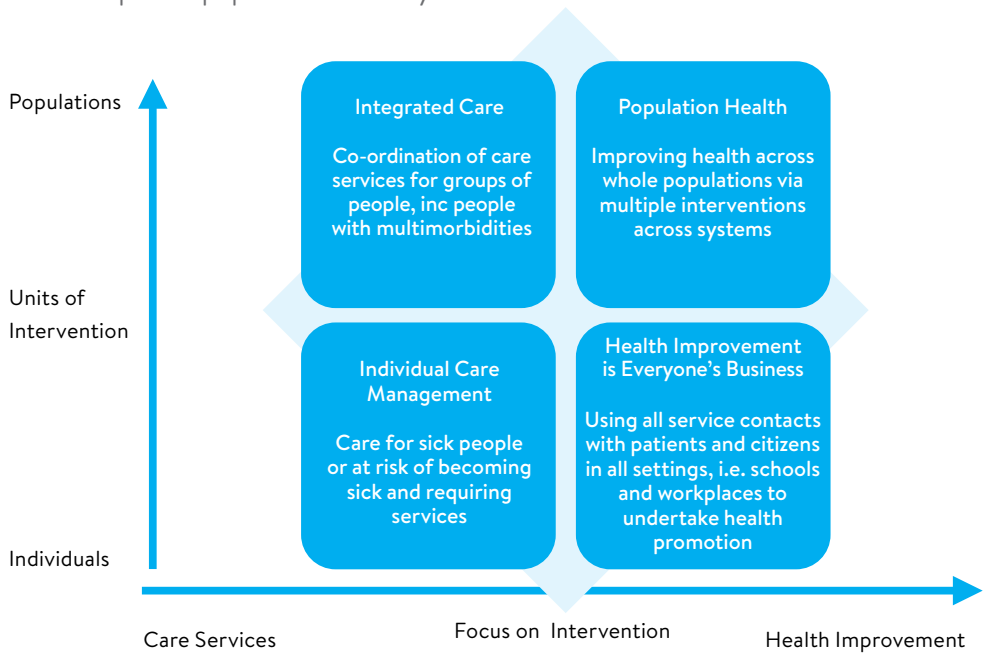
- **At the macro level,** integrator organisations use a population-level lens to plan programmes and interventions across a range of different services and sectors. Key features include: population-level data (to understand need across populations and track health outcomes); population-based budgets (either real or virtual) to align

financial incentives with improving population health; and involvement of a range of partners and services to deliver improvements.

- **At the meso level**, integrator organisations have developed different strategies for different population segments, according to needs and level of health risk. Key features include: population segmentation and risk stratification; strategies targeted at different population segments; and developing 'systems within systems' with relevant organisations, services and stakeholders.
- **At the micro level**, integrator organisations deliver various interventions (including housing support, education programmes, employment advice and smoking cessation services) to improve the health of individuals. Key features include: integrated health records to co-ordinate services; scaled-up primary care systems; close working across organisations and systems to offer a wide range of interventions; and close working with individuals to support and empower them to manage their own health.

The shift in focus from the individual to population is illustrated in Figure 3 below.

FIGURE 3: The scope of a population health system



Source: Modified from Alderwick et al, 2015

6.2 The transformative role of primary care networks

Applying this kind of thinking in the Australian context is challenging because there are divided responsibilities for healthcare governance and funding between Federal, State and Territory and local Government, non-government organisations, private health insurers and individuals who pay out-of-pocket expenses for health care. The Federal government is clearly part of the macrosystem for primary care. PHNs are clearly both part of the macrosystem and the mesosystem; their role is to support the clinical microsystems, which are the teams at the frontlines of care. However, PHNs may need to accept that in the Australian context, the macrosystem activities proposed by the IHI, in particular the requirement to invest in and use data to target services and populations and to develop strong strategic partnerships for change, are key levers in moving towards the establishment of population health systems.

This goal will not be accomplished simply. Analysis of the governance of secondary care suggests that the macrosystem is the state government, the mesosystem consists of regional health services and the clinical

microsystems are the hospitals and specialist health teams and services. Hence, current macro-level obstacles to integrated, coordinated primary care and the establishment of robust, stepped patient pathways are immediately evident.

Happily, several initiatives are currently underway at the macrosystem level that may ensure that the necessary changes are made in healthcare funding, governance and system performance. These include the establishment of the Primary Care Advisory Group (PCAG), which will advise the Federal Government on options for reform in several of these areas in 2015. In addition, the *Reform of the Federation White Paper (2015)* represents a generational opportunity to address the dysfunctional split responsibilities for health care governance between the Commonwealth, states and territories. In the interim, the PHNs appear to be the best available lever at meso-level to support the front line of primary care clinical practice, or micro-system, to become fit for purpose in the management of complex, chronic conditions. However, PHNs will fail in their efforts if they cannot engage primary care and other partners in the change effort.

In this context, the Australian Primary Care Collaboratives (APCC) Program can provide support at the microsystem level. This important initiative is funded by the Commonwealth to help general practitioners and primary health care providers work together to:

- improve patient clinical outcomes;
- reduce lifestyle risk factors;
- help maintain good health for those with chronic and complex conditions; and
- promote a culture of quality improvement in primary health care.

Ultimately, the APCC Program aims to find better ways to provide primary health care services to patients through shared learning, peer support, training, education and support systems.

The Program uses collaborative methodology designed by the IHI (which developed the Triple Aim). This methodology includes a generic quality improvement model that can be applied to achieve incremental, rapid and locally relevant improvements across a broad range of clinical issues, including better management of complex chronic conditions including multimorbidities.

6.3 Implications for Australia

The first is that there is a need for a new narrative for chronic disease that firmly encompasses the interactions between mind and body. There is a growing evidence base to suggest that investment in chronic disease management can deliver a significant social and economic return. Promising national and international 'seeds of the future' can be scaled to good effect across Australia.

The second implication is that it is vital to shift towards more integrated approaches to management of complex chronic conditions. However, as argued in this paper, in order to fundamentally improve population health it is necessary to move beyond integrated care for individuals, important as this is, towards the development of population health systems (as illustrated in Figure 3).

This is a very challenging agenda. Achieving a transformation of this kind requires greater alignment at macro, meso and micro levels, starting with governance arrangements for both primary and secondary care and cascading through federal, state and local government systems and national and local health care organisations including primary care, ultimately there has to be successful engagement of local communities and neighbourhoods. Attempts to do this in other parts of the world have met with only partial success, but these are still early days in the emergence of what can be understood as a new health care paradigm. The challenges involved in attempting to achieve this level of change must not be underestimated but are on a par with the potential benefits. There is an urgent need for political and clinical leadership in supporting this change.

6.4 A plan for action

The following sets out an initial road map towards integrated health care for mental and physical chronic diseases:

1) **Primary Health Networks can act as catalysts of the future system.** Quality and safety standards for PHNs should address greater integration of care for people with complex conditions, including multimorbidities. Performance expectations should be developed for PHNs consistent with the objectives of the Triple Aim approach. PHNs, acting in partnership with other local and regional agencies, can also act as champions for the development and deployment of a public health workforce focused on primary and secondary prevention. Targets and indicators for population health should guide this process. The AHPC has published a set of targets and indications to support, guide and track progress towards a substantial change in the health of Australia (McNamara et al 2015).
2) **Greater integration of mental and physical health care** should be a key ambition locally and nationally. Strategies to create this must be underpinned by comprehensive action from PHNs to engage and work with GPs and primary care providers to develop innovative service models in primary care offering better coordinated, proactive and coordinated care to people with complex chronic health conditions. PHNs will fail in their efforts unless the front line is engaged. Promising integrated interventions, such as the TrueBlue model of collaborative care cited in this report, should be identified and evaluated and those that show promise should be scaled. The APCC methodologies also discussed in the paper have the potential to support front-line clinicians involved in primary care innovation and continuous quality improvement.
3) **New approaches to joint working and care coordination** between primary care and specialist mental health services are required to support these efforts. In addition, there is an urgent need to develop mechanisms to undertake widespread translation and dissemination of best evidence in supporting the mental and physical health of people with severe mental illness.
4) **There is an urgent need for healthcare funding reform** to enable the delivery of integrated, coordinated care for patients with complex conditions. It is noted that the Primary Care Advisory Group is reviewing options for payment arrangements that support a better primary health care system. This is an important opportunity to develop a funding mechanism or mechanisms that are appropriate to the changing patterns of population health and illness that are an increasingly common feature of the 21st century landscape. This may mean the replacement of current fee-for-service payments to clinicians by bundled funding packages which reflect the need for integrated, multidisciplinary and coordinated care. This will be better for patients and more cost effective for health care payers, whether these are governments, health insurance organisations or patients themselves. The AHPC proposes the establishment of an integrated insurance scheme as a key mechanism in a national strategy to develop a chronic disease-focused healthcare system in Australia (Paolucci & García-Goñi 2015).
5) **Governments and service providers must invest in and improve the use of health system informatics** to drive improvements in clinical practice and to help nudge health behaviours towards living well. The primary care sector needs to be encouraged to make routine use of data on patient outcomes to facilitate continuous quality improvement and to develop primary health care performance monitoring at regional and system levels. The APCC Program has demonstrated the value of data in continuous quality improvement. The consistent collection of quality data by clinicians should be built into new integrated care models complemented by consistent use of patient experience and outcome measures. There is a need for a National Minimum Dataset for chronic and complex conditions drawn from general practice, community and Aboriginal health services, allied health and hospital data.
6) **Workforce development** including skills and attitudinal deficits must be addressed to achieve an integrated health care program. These deficits are located in all clinical arenas but have special impact in primary care, where most people at high risk of chronic illness are managed. New capabilities will be required by clinicians in all sectors. There is, in addition, a critical shortage of both people and skills in the broad public health workforce, including specialists in health surveillance, disease prevention, infectious disease control, health promotion and health education. Local and regional access to all of these skills is as important as clinical skills if the aim is to keep people healthy, not merely respond to sickness.

7. Conclusion

Chronic diseases of mind and body, in interaction, have the potential to overwhelm health care budgets and services and reverse the life expectancy gains which have been achieved in Australia without bold, strategic action. There is an urgent need for a new approach to prevent or delay them as long as possible. This kind of change will require strong and constructive leadership at every level. Whilst there are a range of technical barriers to the implementation of such a profound shift including, in some areas, only limited, if growing evidence, it is clear from international examples that it is possible to describe and, critically, to implement evidenced-based population health systems that can make progress in all three dimensions of the Triple Aim framework at the same time: improving the experience of care, improving population health and reducing the rate of increase in healthcare costs in the longer term. These developments will not be sufficient by themselves to address the root causes of the many ills that beset modern Australia. They will however provide a more rational and effective response to the prevention, treatment and management of the non-communicable diseases that characterise modern life.

The most profound barriers to such a change do not relate to technical issues but to the inertia in current systems created by funding arrangements, custom and practice, mindsets, lack of workforce capabilities and the disturbing persistence of stigma and discrimination. The clear benefits of what could be achieved are not in doubt. It is important not let the pain and effort of the transition state with its accompanying disruption of institutions, habits, norms and income streams stand in the way of imagining and shaping the future. These norms include the increasingly dysfunctional partition between mental and physical health systems which must become, at the very least, much more permeable if there is to be an effective, 21st-century response to the prevention and management of the most common chronic diseases.

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