This Social Sector Science Advisor's presentation/submission titled "Toward a Whole of Government/Whole of Nation Approach to Mental Health: Presentation to the Government Inquiry into Mental Health and Addiction by the Social Sector Science Advisors", dated 10 May 2018, should be read in conjunction with a later report titled "Towards an Evidence-Informed Plan of Action for Mental Health and Addiction in New Zealand: A response by the Social Sector Science Advisors to the request of the Government Inquiry into Mental Health and Addiction", dated 13 July 2018.

This latter report was requested by the Mental Health and Addiction Inquiry to assist the Panel in its internal deliberations. It contains the views of the Social Sector Science Advisors, and was produced as one input only amongst other commissioned research, and additional to information received by the Inquiry in over 5200 submissions and conveyed at over 400 meetings.

Toward a Whole of Government/Whole of Nation Approach to Mental Health

Presentation to the Government Inquiry into Mental Health and Addiction by the Social Sector Science Advisors

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Abstract – the presentation in brief

The problem
When it comes to the burden of mental disorder in New Zealand, we do not, as a society, grasp the extent and severity of the problem and we do not recognize or treat many of those who need it. What is needed is an understanding that mental health is not just a health problem that requires an upgrading of capability and capacity across the sector. We need a new vision that is based on an understanding of how mental wellbeing can be affected across the lifecourse and a commitment to prevention, early detection, and early intervention, as well as to improving treatment resources and effectiveness.

There have been multiple relevant reports. We now know a great deal about what works. We have the capacity to try new things specifically in the New Zealand setting. This means that a key question is what stops us developing a culturally responsive, evidenced-based strategy and implementing it at scale across the nation.

Prevalence
More than half the population of New Zealand is likely to experience a mental disorder at least once in their lives. This is not markedly different from the situation in other high-income countries. In any one year, one in five New Zealanders will be living with a clinical-level disorder that sufficiently impairs their lives to warrant intervention.

Onset
Most adult psychiatric disorders have their onset before the age of 18 years.

Treatment
Only a minority of people suffering from diagnosable mental disorders receive sufficient treatment for their problem.

Alcohol and drug use
Cannabis, especially in young people, and methamphetamine also play a significant role in the burden of mental illness. Although drug use is a well recognised risk, it is also essential that we acknowledge that alcohol misuse plays an important part in the burden of mental illness in New Zealand. From that understanding, we need to move to large-scale prevention, using all possible levers because the impact of alcohol begins at, if not before, pregnancy.

Digital Technology
Increased access to and usage of digital technology is associated with risks to psychological wellbeing. For example, social media, coupled with personal devices, increase opportunities for bullying behaviour online (cyber-bullying).

Housing
Lack of housing is a high-level stressor for essentially all humans

Education
Low levels of engagement and limited success through schooling increases risks.

Prisons
The lack of evidence-based early-intervention programmes and programmes to address childhood trauma, the lack of treatment programmes for family violence, and too few education-support services to keep at-risk children in school all increase the likelihood that young people will end up in prison.

The role of prisons themselves in the development and exacerbation of mental health disorders needs to be thoroughly examined and remediated.

Colonisation
Colonisation impacts indigenous people around the world. It has several important characteristics that are consequences of: invasion of homeland (sometimes forcibly, sometimes coercively, sometimes insidiously); expropriation of land (again in a variety of ways); disruption of language, system of knowledge, culture, and way of life; major health impacts, including mortality from epidemic diseases; and forcible loss of autonomy as a people. A continuing conversation about colonization – across New Zealand society – is central to understanding the mental (and physical) disease burden of Māori. It is also important that we appreciate that concepts of wellbeing can extend beyond the individual to the family/whanau and community.

Mental Health
It is important that we understand that there is a difference between robust mental health and the simple absence of mental illness.

The current approach
The current approach works well for some people some of the time but: there are people and groups who experience markedly worse outcomes; the approach is better at tackling some types of mental illness than others; intervention is often too late; and that intervention may never come. Current approaches to prevention are at best variable, with little evidence for overall effectiveness.

The need for a tripartite approach
First principles make it clear that we must consider how to prevent individuals become individually unwell, at the same time ensuring adequate and appropriate treatment for those who become mentally ill. Prevention requires an understanding of the life course. It is a fundamental of human development that mental health depends in large part on neurobiological development in early life that promotes healthy emotional development and resilience to later stresses. However, it is also critical to appreciate the context of modern society (digitilisation, urbanisation, access to drugs and alcohol, demographic change) increases the stresses that impact on mental resilience and play a role in the increasing burden of mental disorders.

A new paradigm for mental disorder and mental health in New Zealand based on understanding the life course
The framework of the life course allows us to understand that what happens early in someone's life can have a major impact on their future health, including mental health; to focus on well-being, resilience, habits, and family, social, and educational support that build

mental health and reduce the likelihood of mental illness; to identify problematic life trajectories, when expected development deviates from typical paths; to intervene early and broadly to support, nurture, and encourage development.

The underlying logic involves understanding that there is a marked contrast between poor and optimal human development; comprehending that these outcomes benefit or harm the whole of society; investing in services to match need, reduce harm, and optimise benefit. It requires a coherent approach across agencies and all other community resources that are focussed on mental health and resilience.

Developing Brains
We need a much better understanding of how malleable fetal, infant, and adolescent brains are and how much they can be impacted by both beneficial (good parenting, love, appropriate direction and discipline, good nutrition) and malign (alcohol, tobacco, violence, abuse, absence of care) influences throughout the first two decades of life

Prevention in young people
Although the most important and most highly vulnerable developmental time is pre-pregnancy to age three, evidence shows that some interventions work and some resilience can be fostered at every age, even among those most damaged.

The life-course approach can be used to foster both resilience and the health-promoting functions of the whānau /family and the wider community context:

1. From conception to birth, implementation of systematic evidence-based antenatal care. Poor maternal mental health has been shown to have both direct and indirect effects on child mental health;
2. At birth, well-child providers, including Plunket, ensure a universal intervention titrated according to need;
3. At 2 years, it is likely that a further major context that can be well used for prevention and intervention is early childhood education services;
4. With the transitions to primary and secondary schools, the system again functions to identify and support the vulnerable child and to augment the effectiveness of resources and efforts of whanau/family in improving and maintaining resilience and the capacity to learn self-control;
5. Throughout the early lifecourse (0-18 years), attention is paid to the cumulative benefits of coherent approaches *e.g.*, to the development of self-control and other social skills across early-childhood, primary, and secondary education. This approach also results in long-term benefits as young adults enter the workplace with high-level social and emotional skills and honed self control and executive function.

Because most adult mental health disorders are juvenile disorders grown up, dividing services/providers between the child and adolescent years and the adult domain, as though these were different problems, makes little sense. Indeed it can been argued that by intervening early and effectively, up to 50% of the current burden associated with mental disorders might be averted. On this basis. considerable resources should be re-directed towards the child and adolescent years.

Prevention and Treatment in Adults

In-patient hospital care is typically required for the most severe cases of mental-health disorder. Improved services are required, however, across the spectrum of primary, secondary, and tertiary care. Rates of disorder requiring treatment are far higher than the current level of service provision can cope with. Service response capacity must be substantially increased.

There is clear and substantial evidence from RCTs that cognitive behavioural therapies (CBT) for a variety of psychiatric disorders are at least as effective and sometimes much longer lasting than drug therapy. Given current workforce size, however, validated computer-delivered treatments (e-therapies) are urgently needed because they work for psychiatric disorder at all levels of severity; are as effective as traditional face-face therapy; are able to be delivered with high fidelity; are massively scalable, and are cost-efficient.

Important elements of an informed New Zealand response mental disorder at older ages include: greater awareness of those in need in the community; community support for those affected by loss, increasing loneliness, declining mental health, and frank mental disorder; improved and focussed management of neurologic and psychiatric disorders of the elderly; exploration of e-therapy approaches.

Evaluation from a known baseline

A number of approaches described above will need to be further developed between and across agencies. These interventions will need to be merged with current services or will involve change in current services. Accordingly, both baseline data and continuing evaluation of the direct and indirect effects and costs and benefits of each initiative are seen as essential rather than optional. New Zealand has a unique opportunity to use its social-sector data to identify the most effects points of intervention.

This strongly implies the need for a comprehensive baseline survey of the current state of both mental disorder – including substance use and addiction – and mental wellness across New Zealand society. The value of these baseline data can be greatly enhanced by integration with relevant data in the IDI.

Presentation

Introduction

At present, the structure in New Zealand for treating mental disorder and supporting mental health is neither optimal nor working well. There are at least six reasons for this:

1) we do not, as a society, grasp the extent and severity of the problem;
2) the context of the way we live our lives as a society has changed and that imposes a greater burden on our mental health resilience
3) although we understand that all parts of the social sector deal with the fallout from this systemic insufficiency, we have not built a whole-of-government response;
4) we do not recognize or treat many of those who need it;
5) when we do treat, we do not always use the right approach;
6) we do not pay enough attention to prevention and early intervention and the maintenance of mental health.

However, we have the understanding to design and build a new structure that is enabled by an approach that involves investing in wellbeing. The new structure will involve all five social-sector ministries, because they not only deal with the consequences of the broken system, they are also part of the solution – and some of the needed resources are already in place.

What is needed is:

1) the bringing together of those pieces into a coherent whole;
2) an understanding that mental health is not just a health problem;
3) upgrading skills and building new capacity across the sector;
4) a focus on prevention, early detection, and better treatment;
5) an understanding of the life course and its implications for mental health;
6) active consideration of those contextual levers that can be reached;
7) time.

Section 1: Understanding The Burden of Mental Illness

1. The Global Burden of Disease project shows that mental-health disorders are associated with a high population burden based on the extent of the disability experienced by sufferers across their lifetime[1,2].
2. The true lifetime prevalence rates of mental illness are much higher than many people assume: more than half the population is likely to experience a disorder at least once in their lives. The 12-month prevalence is approximately 20%; in other words, in any one year, one in five New Zealanders will be living with a clinical-level disorder that sufficiently impairs their lives to warrant intervention[3].
3. The evidence suggests that only a minority of people suffering from diagnosable mental disorders receive treatment for their problem[4,5].
4. Most adult psychiatric disorders have their onset before the age of 18 years. This implies that ‘adult’ disorder is a misnomer in most cases; rather, these disorders are juvenile (and sometimes childhood) disorders [6-8], amplified by continuing adverse life experience of these individuals.
5. Everyone has friends, family, whanau, colleagues who have experienced or are currently experiencing mental illness.

6. Layard makes the point that, for chronic physical illnesses, we have no problem, as a society, agreeing that we need to provide appropriate diagnostic and treatment services[9]. Mental illness, with its comparable burden of morbidity, similarly requires appropriate diagnostic and treatment services and needs to be on an equal footing.
7. The challenge is compounded by the failure of many people to understand their own mental health status, by contextual factors that make our mental health more likely to be challenged, and by lack of understanding of the importance of programmes that promote mental wellbeing, particularly in early life.
8. The current approach works well for some people some of the time but:
   a. there are people and groups who experience markedly worse mental health outcomes as a result of the current approach (as well, often, as poor outcomes across many other areas e.g. education, employment, income, crime);
   b. the approach is better at tackling some types of mental illness than others;
   c. intervention is often too late (once problems have become severe);
   d. and, as is clear from point 3 above, that intervention may never come.
9. We need a new paradigm for mental disorder and mental health in New Zealand.

Section 2: Understanding Suicide

Although we tend to discuss suicide as though it were a unitary entity, in reality, there are at least three different pathways to various combinations of these related – and sometimes escalating – pattern of behaviours: self-harm, suicidal ideation, suicide attempts, and successful suicide.

Suicide among youth

Suicide among young people aged 11 to 15 years is linked to risk factors including mental health problems (not unlike the patterns seen in adults), a family history of suicidal behavior, family problems (in particular, what are called Adverse Childhood Events; there is a powerful graded relationship between adverse childhood experiences and risk of attempted suicide throughout the life span[10]), and bullying by peers. Data from a random sample of 482 young people in this age group (2003-2014) who suicided (US National Violent Death Reporting System) showed fewer girls than boys (31 vs. 69 %)[11]. Some common themes emerged: relationship problems, particularly with parents, were the most common suicide antecedent. It is in young people that we see the stepwise progression towards suicidal behavior: those who successfully suicided were commonly exposed to one or more problems, had resulting feelings of loneliness and burdensomeness, which progressed toward thoughts and sometimes plans for, or attempts at, suicide. Continued exposure to negative experiences and this cycle of suicidal ideation and self-harm eventually led to suicide[11]. These findings emphasise the importance of multi-level, comprehensive interventions and prevention strategies that increase awareness of the warning signs and symptoms of suicide, particularly among family members of at-risk youth.

Childhood maltreatment and its subtypes are strongly associated with non-suicidal self-injury (odds ratio 3.4): lifetime prevalence is 5% in adults; 17% in adolescents; 30% in adolescents with a mental disorder[12]. This raises the question of whether non-suicidal self-injury is on the rise.

However, it is clear that youth suicide is not a mental disorder in and of itself – it is the outcome of a wide array of influences. The likelihood of suicide and suicide attempts are associated with a number of factors that include:

- socio-demographic factors and restricted educational achievement;
- family discord and poor family relationships;
- the tendency to impulsiveness;
- what is termed externalising behaviour (anti-social behaviours and alcohol problems);
- what is termed internalising behaviour (e.g., depression);
- low self-esteem, hopelessness, loneliness;
- drug and alcohol misuse;
- a history of suicide attempts by friends and family members; and
- exposure to partner- or family-violence in adolescence.

New Zealand has one of the highest youth suicide rates in the OECD[13]. A 2012 study of 8500 New Zealand high school students found that 4.5% reported a suicide attempt in the last 12 months and that 7.9% report repeated non-suicidal self-harm in the last 12 months. Economic deprivation was associated with higher risk and low mood and exposure to suicide attempts by friends and family members (and consistent with findings in the US Canada and Ireland)were both key exposure factors[14]. However, there is little evidence in New Zealand for suicide contagion among school peers. The patterns more explainable by the demographics (especially poverty and deprivation) of the school population than contagion[14].

Impulsive-aggressive behaviours are commonly associated with suicide in young people and decline as a factor with age. MH490 Youth who demonstrate antisocial or delinquent behaviours are 10 times more likely to have attempted suicide[15].

As we noted in the note prepared by the CSAs, suicide among the young needs to be seen often as the result of a state of stressed, impaired, or underdeveloped self-control, in which mental health, emotional and brain development, alcohol, and sociologic, economic, and other factors interact to put some young people at greater risk.

There are data to suggest that self-harm is not always part of a sequence that points towards suicide but is sometimes a way to externalise pain and sometimes a cry for help. At the community level, individuals who self-harm by cutting themselves differ somewhat from those who take overdoses: self-poisoning has more suicidal intent whereas self-cutting ia more about self-punishment and tension relief[16,17].

Suicide among adults

At least since Barraclough's 1974 paper[18], we have known that among adults, suicide is largely associated with severe depression but is also seen among those with frank psychosis: schizophrenia and severe bipolar disorder[19,20]. Furthermore, alcohol plays a key role because of its association as a cause of depression, because those with depressive symptoms choose to self-medicate with alcohol, and because intoxication is a frequent acute precursor to the act of suicide[21-25].

Suicide in late life

Subjective well-being is a goal for most and a state for some. It has been shown that one aspect of wellbeing—enjoyment of life—is associated with longer survival in a dose-dependent fashion. Further, a substantial inverse association between longevity and enjoyment of life remained after controlling for depression. Less prevalent illness, greater wealth and education, being married, and being in paid employment, all of which have established links with survival, accounted for approximately one-third of the inverse association. However, greater enjoyment of life was associated with a 28% lower risk of mortality even after these factors, depression health behaviors had been accounted for[26].

Nonetheless, suicide is also found among older people and the association with the depression and psychotic disorders seen in younger adults persists. However, in this older group particularly, there are individuals who are not suffering from a mental disorder and who make a rational decision to terminate their life. It may be that they wish to avoid a looming painful terminal illness such as that associated with pancreas and other cancers, they may be increasingly physically disabled by disease, or there may be other reasons associated with the quality of their life, including loneliness, chronic debilitating pain, or loss of faculties. Although some worry cogently about underlying undiagnosed depression[27], there are those who are comfortable that decisions about suicide can be rational[28]. There is a need for a careful community discussion around the meaning of suicide in adulthood.

Section 3: The Principles Underpinning a New Paradigm

1. Good mental health improves and maintains all areas of our lives, as well as having marked and widespread social and economic benefits. Drivers and consequences of good and poor mental health are everywhere, impacting, being influenced by, or both:
   a. family /whanau[29,30]
   b. employment and unemployment[31-35]
   c. the changing nature of society (urbanization[36-38], digitalization[39-42], rapid change[43-46], etc,)
   d. Developmental influences from before birth to adulthood[47-54]
   e. the economy[55-63]
   f. education[61,64-67]
   g. justice/police/prisons[68-71]
   h. poverty[35,72-75]
   i. alcohol[21,23,69,76-80]
   j. drug use[69,81,82]
   k. nutrition/hunger[74]
   l. physical activity[83]
   m. genetics[84-87]

2. With this complex net of influences, using the notion of the life course[29,88,89] allows us to:
   a. understand that what happens early in someone's life – both beneficial and traumatic – can have a major impact on their future health, including mental health;
   b. appreciate that there is an optimal time for each mental and physical developmental stage for at least the first 2 decades of life (as well, in a less marked way, for the rest of life) – and therefore preferred times to intervene;

c. focus on well-being, resilience, habits, and family, social, and educational support that build mental health and reduce the likelihood of mental illness;
d. identify problematic life trajectories, when expected development – mental and emotional as well as physical – does not occur, or deviates from typical paths;
e. intervene early and broadly to support, nurture, and encourage development;
f. appreciate that, although on-time development and early intervention are better, anytime is appropriate for the alleviation of emotional pain and the acquisition of new life skills;

3. We need to acknowledge that there is a gap between what we know and what we do. This gap is characterised by four key considerations:
    a) we are not recognising as a society the complexity and magnitude of the problem[3,90];
    b) we must appreciate that the rapidly changing nature of how we live our lives challenges our resilience and exposes us to greater threats to our mental health – this means the level of need will continue to rise[46];
    c) we are not responding to the manifest level of need[70]; and
    d) when we do respond, evidenced-based interventions are not always applied[9,70,91];

4. We need to ensure that we do not simply deliver more of what we already do; failure to change will mean disrupted, unproductive lives and a continuing high financial burden on the state

5. We need to understand that disturbances of mental equilibrium and mental health are multifactorial: that many different parts of our history, our experience, our cultural background, our genetics, and our current circumstances can conspire to induce mental illness. That means that there are no simple or singular steps towards prevention, treatment, and remediation; rather, there is a need to pay attention to multiple aspects of both environment (family, community, workplace, and living space) and individual coping skills. Recent changes in societal structures (urbanisation[36-38], digitalisation[39-41], changed ways of interacting in larger networks[43-46], social isolation[92], etc.) disturb our psychological equilibrium and challenge our mental health – these forces will continue to drive demand. For the nurturing of children's mental health, there is a need to focus particularly on parenting skills, promotion of healthy attachment relationships, prevention of family violence, encouraging opportunities for play, exercise, and learning self-control skills, fostering healthy human interactions, behaviors, and skills in the cyber world, as well as underlying drivers of stress, particularly poverty and housing problems. For everyone, mental-health services need to be part of the social infrastructure that is in the business of fostering health as well as short-circuiting the descent into despair for individuals, family, whanau, and community.

6. We also need to understand that despite a proliferation of diagnoses in official diagnostic manuals (*e.g.,* DSM-V), the structure of mental-health disorders (more formally known as psychopathology) is far less differentiated than these suggest. The network of risk factors is complex but there are some very general psychological mechanisms at work and the structure consists of a core underlying vulnerability

factor[90,93,94], with more granular distinctions involving a tendency to become depressed and anxious (called "internalising" disorders); a tendency to act out (substance abuse problems, ADHD, conduct disorder – collectively called "externalising" disorders); and, finally, a tendency to thought disorder (psychosis, bipolar disorder).

7. It is important that we understand that there is a difference between robust mental health and the simple absence of mental illness. Robust mental health is surprisingly uncommon[90]. Many who do not suffer from mental illness do not possess good mental health – and may be in a vulnerable state if put under stress: mental, physical, emotional, or financial. Therefore, particular attention needs to be paid to the acquisition of habits and skills that nurture mental health and resilience, not just keep mental illness at bay.

8. As a nation, we need a much better understanding of how malleable fetal, infant, and adolescent brains are and how much they can be impacted by both beneficial (good parenting, love, appropriate direction and discipline, good nutrition) and malign (alcohol, tobacco, violence, abuse, absence of care) influences throughout the first two decades of life. This malleability directly contributes to the vulnerability associated with the p-factor (point 6 above); it leads us to consider the importance of education, not just education of children in school, but education of everyone across the whole community, as they support those beneficial influences and reduce the deleterious ones for growing children. Because particular life circumstances are more threatening to the development of mental illness in the young, expending energy, care, and investing in wellbeing in this most vulnerable group will reduce both misery and costs in the longer term. In this regard, attention needs to be paid to housing, parenting, violence, smoking, alcohol, drugs, etc.

9. Furthermore, it lies well within the mental health framework to discuss:
    a) the development of critical thinking as a required skill, in order to understand automatic negative reactions/cognition, and especially as it pertains to negotiating and navigating the internet;
    b) the development of self control and non-cognitive executive functions that generate greater prosocial behavior and mental health resilience;
    c) understanding and use of science to explore the world, attain perspective, negotiate life choices, and find meaning;
    d) the development of social and collaborative skills that contribute to civic engagement and the development of social capital as part of an effort to nurture healthy, interactive environments for people to live in[45].

10. It is essential that we acknowledge that alcohol misuse plays an important part in the burden of mental illness in New Zealand. Alcohol use, when excessive, can lead to a diagnosis of abuse or dependency. Those with alcohol abuse or dependency problems typically have high rates of other psychiatric disorders[79] – a bidirectional association. Alcohol abuse is both cause and consequence: alcohol use can lead to or exacerbate mental-health problems (as well as high-risk behaviours such as unprotected sex), as well as being a consequence of other psychiatric conditions, as self-medication takes over; those suffering from mental dysfunction use alcohol in an attempt to control their

symptoms and distress. Alcohol misuse has pernicious effects from the beginning of life. Specifically, alcohol use during pregnancy has been shown to significantly impair the unborn child's life chances through direct toxic effects on the developing brain (inducing manifestations of the Fetal Alcohol Spectrum Disorder), including elevating the risk for later behavioural and emotional disorders[78,80]. More generally, family functioning can be severely impacted upon by parental alcohol abuse, ranging from increased risks for intimate partner violence and child neglect through to inconsistent parenting and high rates of serious childhood injury[78]. Therefore, any approach to improvement of mental health has to include discussion of alcohol misuse – at the level of the individual, the family/whanau, the community, and the whole nation. New Zealand has a very permissive culture in relation to alcohol and the difference between use and misuse is often not clear[95,96]; there is, however, a widespread realisation that alcohol plays a major role in violence, vandalism, dangerous driving, and traffic crashes as well as an expectation that local government will prevent alcohol becoming a problem in the community[97].

11. Central to the way we deliver mental-health care is a reorganisation of support services to the vulnerable so that the way in which interactions occur are focussed on the individual in need, not on the priorities of the service deliverer. We need, particularly, to ensure a predictable, preferably single, point of contact for services for each individual. This has been shown to be appropriate even in the setting of specialised integrated care for psychosis[98]. This must, however, be balanced with the opportunity for vulnerable people to have options and alternatives, especially in the underserved communities.

12. There is a high level of commitment required to work in support of mental health and with those with mental illness. To build a resilient system, we need to ensure that we value and enhance the mental health of our mental-health workers in order to support the mental health of our whole society[99,100].

13. Because most adult mental health disorders are juvenile disorders grown up, dividing services/providers between the child and adolescent years and the adult domain, as though these were different problems, makes little sense. Indeed it can been argued that by intervening early and effectively, up to 50% of the current burden associated with mental disorders might be averted. On this basis. considerable resources should be re-directed towards the child and adolescent years.

Section 4: The Response - its key elements

1. Prevention in young people

a. Although the most important and most highly vulnerable developmental time is pre-pregnancy to age three, evidence shows that some interventions work and some resilience can be fostered at every age, even among those most damaged. Therefore, we approach the problem of vulnerable children (often in disadvantaged communities) across life stages as though there is always room for improvement or rescue;
b. The life-course approach insists that we must pay attention to the transition stages so that:

1. assessment of vulnerability is possible for each child/adolescent. From the Dunedin Longitudinal Study, we know that approximately 20% of individuals account for about 80% of the high-cost outcomes in adulthood. Vulnerable individuals can be differentiated from their peers by at least four childhood disadvantages: growing up with greater SES deprivation; experiencing childhood maltreatment; scoring poorly on childhood IQ tests; and exhibiting low childhood self-control. Moreover, in this population, a 45-minute examination that included assessments of neurological soft signs, intelligence, receptive language, and motor skills provided a summary brain-health index. Variation in this index, at three years of age, predicted, with impressive accuracy, who would be members of multiple high-cost segment 35 years later. Caution is appropriate here as the index consisted of a range of assessments undertaken 40 years ago in a population and social milieu quite different from our current one. Nonetheless, vulnerability could be assessed using an approach derived from these findings at a very young age. Appropriate prevention, early intervention, and remediation strategies could be implemented with the likelihood of greater ROI than later attempts;
2. there is a secure transition from one responsible agency to another for those whose increased vulnerability is already known, keeping in mind the goal of maintaining a predictable, preferably single, point of contact;
3. services are geared such that transition protocols are both in place and regularly reviewed for their effectiveness and completeness.

c. Identification of those at risk;
d. Identification of communities at risk;
e. Community education to promote self-recognition of mental ill-health and to remove the stigma associated with mental disorder;
f. Support for vulnerable families and whanau and at-risk communities, not just for at-risk individuals;
g. Further, and crucially there are non-medicalized approaches to healthy development with strong potential dividends. Positive social skills and self control can be promoted both directly through parenting practices and teaching[101,102], as well as indirectly in the design of environments for children and young people. For example, providing safe places for children to engage in unstructured play allows for natural practice in self-control, team-work, perspective-taking, dealing with frustration, confidence-building, leadership, and problem-solving. Making sure children have access to sport and music fosters healthy neurodevelopment without the potential stigma of having a social worker engaged in their lives. A randomised controlled trial has demonstrated that physical activity (PA) enhances cognitive performance and brain function during tasks requiring greater executive control[103], demonstrating a causal effect of PA on executive control, and providing support for PA as improving childhood cognition and brain health, although the mechanisms remain to be clarified[83];
h. Evidence has shown that media channels (TV shows such as *Sesame Street*) that directly support socialization[104], learning[105], and resilience[106] in children can be positive influences on childhood development. Equally, we need wider knowledge of the immediate negative impact of fast-moving cartoons on executive function in children[107] and total screen time on mental health[108,109].

i. Increased access to and usage of digital technology is associated with risks to psychological wellbeing[4,110]. For example, social media, coupled with personal devices, increase opportunities for bullying behaviour online (cyber-bullying). Non digital forms of bullying have robust relationships with indices of wellbeing, specifically social and health outcomes[111]. There is some evidence for negative effects of multitasking for cognitive and brain development, affecting bothefficiency and accuracy of performance, especially among younger children whose attention systems and executive functions are immature[110]. However, well designed uses in classrooms can increase self-control and social skills; *e.g.,* adding well designed games to business as usual in the classrooms[112], when tasks are sufficiently complex and developmentally appropriate, where there is greater self-regulation and engagement, and where there is substantial teacher guidance[113]. Current evidence is that access and usage alone without attention to complexity, matching and mediation by teachers does not increase quality of learning[114].

Given a life-course view that locates the drivers of development in both the growing child and in the multi-layered contexts within which that growth occurs we recommend, in more detailed fashion, the following:

To increase both resilience and the health-promoting functions of the whānau /family and wider context,

i. from conception to birth, implementation of systematic evidence-based antenatal care delivered by an expanded and specialised service provided by midwives, Tamariki Ora workers, other Iwi-based support workers, and Plunket nurses. This aligns completely with the goals of reducing child poverty and increasing childhood wellbeing (https://www.beehive.govt.nz/release/government-heeding-call-unrelenting-focus-child-wellbeing);

ii. risk assessment occurs during this period as does assessment of mother for depression[115] and adverse behaviours including use of tobacco[116], alcohol[80], and illicit drugs[117];

iii. at birth, well-child providers, including Plunket, provide a universal intervention intended to:
    1. eliminate, reduce, and ameliorate known and suspected malign influences. This also aligns entirely with the goals of reducing child poverty and increasing childhood wellbeing (https://www.beehive.govt.nz/release/government-heeding-call-unrelenting-focus-child-wellbeing);
    2. teach, demonstrate, and support warm, sensitive, and stimulating parenting practice as an early precursor of good socioemotional function. Parenting practice varies around the world, such that it is not always easy to find commonalities, even bonding and physical and emotional closeness are not seen as primary in some cultures[118] but these behaviours are central to many parenting practices. Indeed, the initial bond between parent and child is crucial, is formed early, and becomes the model for future relationships[119,120]. Parenting continues through childhood and adolescence;

3. use family, whanau, and neighbourhood resources and links to reinforce this approach. Indeed, treatment and early intervention does not have to look like treatment: it can be a toy library acting as an intervention for a stressed, isolated parent who can use it to find community, resources, empathy, and advice;

Steps 1-3 are titrated according to need *i.e.,* targetted or proportionate universalism[121] – or Maximin ethics[122] – under which those in greater need are provided with greater investment of resources and support. At the extreme end of need (5%), this would include an organized approach to nurse-family partnerships[123,124]. Supporting children in opportunities for exercise and play together helps contributes to their mental health[125] as well as to social equality[99].

iv. Monitoring of growth and development begins during this period;

At 2 years, it is likely that a further major context that can be well used for prevention and intervention is early childhood education services:

v. So, at age 2 years, much of the coordination and delivery is transitioned seamlessly to early childhood education (ECE) with a needs profile accompanying each child;

vi. Further risk assessment occurs during this period;

vii. All ECE teachers are specialised to inculcate – in an age-appropriate fashion through to primary-school entry – non-cognitive skills, *e.g.*, self-control (or emotional regulation) and other social skills that develop the empathy and awareness that are needed for care of, and concern for, others. A key function of ECE can be to augment the effectiveness of whanau/family resources to both add to children's well being and resilience as well as contribute to the capacity for early intervention. Non-cognitive as well as cognitive skills are assessed on all children on completion of ECE;

With the transitions to primary and secondary schools, the system again functions to identify and support the vulnerable child and to augment the effectiveness of resources and efforts of whanau/family in improving and maintaining resilience and the capacity to learn self-control:

viii. Primary school builds on this with a prioritised focus on development of socioemotional skills. Mental health has a strong social component: children learn emotional regulation via a community of people who create norms and practices that promote positive mental health and can teach and model coping skills. With this as the goal, ensuring children have opportunities for mentorship, coaching, and guidance (*e.g.,* community and cultural activity, sporting teams, traditional groups like Guides/Scouts, etc) could complement a single-point-of-entry system for those in distress or difficulty, and allow children who are different to gain acceptance – consider, for instance, the potent New Zealand film, "*The Dark Horse*" (http://www.imdb.com/title/tt2192016/).

ix. This continues through the transition into secondary school but with the focus on

age-appropriate issues, *e.g.*, sexual behaviour, alcohol and other substance use, etc., building on Positive Behaviours for Learning and other elements of the former Prime Minister's Youth Mental Health Project;

x. The development of the Communities of Learning /Kāhui Ako provides a design for optimising transitions between Early Childhood Education services, primary schools and secondary schools (https://education.govt.nz/communities-of-learning/evidence-and-data/). With appropriate measures for identifying skills from early childhood through to graduation from secondary school, this will enable more secure transitions to be promoted.

Throughout the early lifecourse (0-18 years), attention is paid to the cumulative benefits of coherent approaches *e.g.*, to the development of self-control and other social skills across early-childhood, primary, and secondary education. This approach also results in long-term benefits as young adults enter the workplace with high-level social and emotional skills and honed self control and executive function[126,127]. Structural and functional changes in the brain have been shown with cognitive therapy (external influences) and certain forms of meditation (internal influences) and suggest that self-control, well-being, and other prosocial characteristics might be entrained or enhanced by specific techniques[128]. We also need to explore directly targetting civic engagement as a potentially self-reinforcing iterative intervention: those who develop consideration for the group will teach others to consider the whole community, thereby increasing societal mental health[129].

Such a new approach would entail shifts in focus and practices among professional groups: *e.g.*, more deliberate evidence-based practices in early childhood education and in schooling, based on the recognition that current curricula enable the desired outcomes but that there is variable and limited impact on self control and social skills. This would require retraining and additional training, *e.g.*, among Plunket nurses and ECE. Digital media (including social media) afford increasingly immediate and direct access to commentary, information and ideas with a consequent amplification of social influence and shaping of ideas and beliefs.There is the risk of children and young people increasingly belonging to insular networks with the sharing and perpetuating of misinformation including judgements about one's health and well being[42]. Deliberate and planned practices by teachers are needed if children and young people are to gain positive skills from access to, and use of, Digital Environments (DEs) in and outside of classooms[113,114], and if risks associated with DEs such as cyberbullying are to be reduced. These necessary steps could be embraced but could also become barriers or excuses for doing nothing.

Indeed, the proportionate universalism approach applies not just to the promotion and protection of mental health thoughout childhood and adolescence generally but also to dominant settings for child development, namely primary and secondary schools. Teachers can build whole-school values and norms, and through the curriculum focus on requisite skills. However, this needs to be backed up with a second-tier response to emerging or sudden need and – if well coordinated and exercised with appropriate skill by counsellors, deans, and nurses – e-therapies and nationally provided services in schools can help deliver this. Severe chronic and acute need requires the third-tier response of dedicated mental-health professionals and needs to be immediately available and responsive.

The underlying logic is clear:

- understand that there is a marked contrast between poor and optimal human development;
- comprehend that these outcomes benefit or harm the whole of society;
- invest in services to match need, reduce harm, and optimise benefit.

2. Prevention and Treatment in Adults

Mental-health services today

In-patient hospital care is typically required for the most severe cases of mental-health disorder, especially during florid states (e.g., formal thought disorder or extreme depression). However, in some settings, appropriately resourced services are now capable of managing severe presentations in the community. Other so-called moderate and milder cases of disorder are far more common and are typically dealt with in an outpatient setting.

Nonetheless, describing disorders as mild-to moderate is rather misleading: they may represent a lower burden on treatment resources than the psychoses and bipolar disorder, but people suffering from the higher prevalence anxiety, depression, and substance-dependence disorders experience substantial distress and dysfunction, with persistent interference in their ability to function socially and occupationally. The distinction is a relative one, mainly because comorbidity is the rule not the exception for mental illness. In other words, people that we regard as having severe mental illness – and even sometimes those with apparently more moderate dysfunction – typically experience multiple disorders, either simultaneously or sequentially.

The science showing underlying vulnerability as the key driver of mental illness (see Point 6 of Principles above) also shows that many people progress through so called milder forms of disorder before ending up at the extreme end of the need continuum. This implies many preventive opportunities exist, but only if early signs of mental illness are addressed properly.

What do the extent of the New Zealand burden and the new insights into mental health and disorder imply for service delivery?

<u>Treatment</u>

a. Rates of disorder requiring treatment are far higher than the current level of service provision can cope with. Service response capacity must be substantially increased[130].
b. There is clear and substantial evidence from RCTs that cognitive behavioural therapies (CBT) for a variety of psychiatric disorders are at least as effective and sometimes much longer lasting than drug therapy[91,131-134]. This means actual implementation of CBT not just supportive psychotherapy.
c. Treatments can, and possibly should, be more generic (i.e transdiagnostic) and targeted at the core vulnerabilities underlying disorders[135,136].
d. Treatments delivered by digital means (smart phones, etc.) are urgently needed. Both mental-health professionals and service users need to be educated about their benefits[137-140]. Their advantages include being: (i) as effective as traditional face-face

therapy (RCT data); (ii) able to be delivered with high fidelity; (iii) massively scalable, and (iv) highly cost-efficient.

e. Digitally delivered courses work for psychiatric disorder at all levels of severity. They can also be deployed preventively in school settings to good effect (again the evidence here is strong and via RCTs).
f. Computer-aided professional development of the mental-health workforce is needed. There are both benefits and barriers to uptake of computer-delivered training and therapy[137,138,141]. Implementation strategies for optimising benefits in New Zealand are likely to include:
    i. strong endorsement of e-mental health services by government agencies
    ii. more education for clinicians and consumers
    iii. consumer input into programming ensuring cultural relevance
    iv. adequate funding of e-based approaches and infrastructure
    v. establishing an accreditation system
    vi. supporting translation-focussed activities
    vii. supporting research on uptake and translation
g. There are, of course, vulnerable populations, in which mental illness is over-represented. This is particularly true for displaced persons[142-144], prison populations[68-70], and the LGBT population[145]; we should pay particular attention to the needs of these groups as we contemplate better ways to deliver services. There are 4000 corrections officers, an approproiate proportion of whom could be trained in CBT and the transfer of other supportive and developmental skills[146-148].

<u>Prevention</u>

h. As already noted, prevention is far more cost-effective than cure. The core vulnerabilities underpinning mental-health problems stem in part from poor neurodevelopment. Prevention and early intervention focussed on maximising strong neurodevelopment should be part of a comprehensive package aimed at addressing mental illness. This includes not only the growing acceptance of the importance of learning self-control among the young but also an extensive array of approaches derived from a variety of cultures and disciplines that provide adults with a greater capacity for self-control, better focus, more control over negative emotions, and a generally less reactive approach to situations (family, work, transactional) that might be stressful; these disciplines, which are increasingly recommended but may still need more evidence, include approaches to mindfulness, tai-chi, yoga, concentration and meditation exercises, mental resilience training, anger management, etc. – the highest benefit seems to come from those with a strong cognitive component. Supporting this approach to the mental via the physical is emerging evidence for the direct connection between the cerebral cortex (roughly identified with mind) and the autonomic and endocrine systems that control internal organs[149]. What this research has established is a clear link between mental states and physical disease and perhaps a link between physical states and mental disorder and a route for understanding why specific physical practices may improve and support mental states.
i. We need to increase individual, family/whanau, and societal support for the promotion of healthy coping and the provision of necessary teaching and training, independent of formal service delivery structures (consistent with Principle 10).

j. In addition to targeted therapies (see above), in what ways can we influence the adult capacity for coping? Accessing the enormous influence of television and other digital media to model kindness, discuss conflicts, and solve problems seems like low-hanging fruit – see above in relation to prevention in children. Passive media may be useful here: Brazil has used telenovelas to support social change; "Cheers" was among the very few effective interventions to make designated driving a widespread harm-reduction strategy in the US; New Zealand has used very potent culturally appropriate public-service announcements in relation to drink driving and speeding.

3. Prevention and Treatment in Older Adults

Some mental disorders associated with ageing can begin to emerge as early as 50 years but are more prevalent and often more problematic at 65+ years. This is a time when specific aspects of everyday life may press in on individuals, initially creating disturbances of mood and disruption of the sense of well-being but sometimes later merging into frank mental disorder.

A sense of failure around whatever goals an individual may have set themselves, loss of a partner through death or divorce, children leaving home, etc. all contribute to a loss of sense of purpose and sometimes to the emergence of feelings of isolation and loneliness. These understandable and, indeed, predictable disruptions of mood and well-being can be exacerbated by physical illness. Poverty is also an important influence.

Faced with these changes, an individual can slide into a depressed state and be at elevated risk of suicide. At this time, too, some neurologic conditions with frank psychiatric overlay can manifest: several varieties of dementia, Parkinson's, etc.

All of these biologic, family, and community changes make older age a time that has its own pattern of psychiatric and neurological disorder and its own particular needs for prevention, early detection, and treatment.

In the 65 years and older in 2003-4 (the most recent date for which we have comprehensive NZ data), the 12-month prevalence of mood disorder was 2.0%, anxiety disorder 6% and substance-use disorder <0.1%[70]. There is some reason to believe that these prevalences have increased and it may be relevant to note that the UK has recently appointed a Minister of Loneliness. Nonetheless, suicide rates have remained flat in this age group between 2006 and 2015[150].

It is important to note that, as in young people, discrete diagnostic categories can be useful for some purposes but the likelihood is, often, that there are some underlying vulnerabilities (perhaps genetic, perhaps acquired in early life, probably a mixture of both) and that mental disorder can manifest in ways that are both multidimensional and changeable over time. Again, as with young people, this may provide the possibility of using treatment approaches that themselves transcend boundaries.

Important elements of an informed New Zealand response mental disorder at older ages include:

1) greater awareness of those in need in the community because of their changed life circumstances, increasing physical ill-health, loneliness and isolation, and frank psychiatric symptoms;
2) community support for those affected by loss, increasing loneliness, declining mental health, and frank mental disorder: family members, whanau, and neighbours, especially those without their own family/whanau. Support can be via both informal neighbourhood networks and more specific service delivery by NGOs and government agencies;
3) improved and focussed management of neurologic and psychiatric disorders of the elderly, particularly transdiagnostic approaches where appropriate.
4) exploring whether e-therapy approaches, some of which have good evidence for efficacy among the young, are also useful among older members of society in need.

4. Importance of Colonisation, History, and Culture

The concept of colonisation is central to understanding the vulnerability — as well as the resilience — of indigenous people around the world[151-153]. Colonisation has several important characteristics that are consequences of: invasion of homeland (sometimes forcibly, sometimes coercively, sometimes insidiously); expropriation of land (again in a variety of ways); disruption of language, system of knowledge, culture, and way of life; major health impacts, including mortality from epidemic diseases; and forcible loss of autonomy as a people[151].

This is the history and cumulative experience of many Māori in New Zealand. It is difficult to establish the exact boundaries of the impacts of colonisation as we do not have data that might allow a detailed comparison between the colonised and those whose lives and culture (over many generations) were not so distorted[154]. Nonetheless, we do have data that provide some common features of the consequences of colonisation. The most important of these are downstream of the disruption of the bond with collective communities, cultural institutions that support a strong sense of identity, the land, and the natural environment[155].

The health consequences are particularly related to socio-economic disadvantage[156], prolonged alienation from resources that might otherwise provide sustainable livelihoods[156], political marginalization or even oppression, and susceptibility to introduced and previously unknown exposures, particularly infectious agents. These four forces are associated with poorer outcomes both for physical health and mental health[151,155]. Only since the 1980s has the impact of the Treaty of Waitangi and the Waitangi Tribunal had an impact on the restoration of alienated resources that Māori had, until the arrival of Europeans, regarded as their own[157]. Clearly, the elevated infectious mortality that follows initial contact eventually selects a population with greater immunity but other health consequences associated with poverty and an often inadequate diet emerge in all indigenous peoples[158].

An educational system that suppressed language, as well as cultural resources that underpin teaching and learning, causes low engagement and low educational achievement across generations[159]. This leaves its mark on, for example, parental educational levels and these, in turn, have known relationships with child development – and all that follows from these trajectories[160,161].

This history has to shape the discussion and design of mental health in New Zealand. It can inform how we design and deliver services with (not for) Maori. There are international and national data that indicate deliberate recognition and use of cultural resources, a focus on mutual respect, and engagement are important conditions for the effectiveness of social services. For example, in education, recognition of, and respect for, language and cultural identity in curriculum design and pedagogy, and enhanced community school relationships can improve student engagement and achievement[162].

In the shorter term, there are many other aspects of our shared culture and history that can be supportive or detrimental toward mental health but, for the purposes of this discussion, we raise two important components:

a. Mātauranga Māori[163-166] – important because it provides insights into ways of living, not only for Māori, but for all New Zealanders – and Kaupapa Māori as an approach to research[167,168]; there is a great deal to learn here and to share across cultural divides. Māori have higher rates of mental illness and mental distress than non-Māori; in the 2006 report: Te Rau Hinengaro: The New Zealand Mental Health Survey, after accounting for sex, age, income, and education, Māori prevalence (23.9%) of any psychiatric disorder was significantly higher than those of European/Other (20.3%), with Pacific people similar to European/Other (19.2%). For serious disorders, the adjusted prevalences were 6.1%, 4.1%, and 4.5%[169,170]. Mātauranga Māori is likely to contribute to our collective capacity to understand, to harness cultural resources, and to ameliorate this excess risk;
b. striving for unattainable goals; this is a major source of life stress in New Zealand society and a characteristic that has become intrinsic to the way we live. Its impact is markedly exacerbated by the degree of inequality in society[58,82,171-173], independent of the impact of poverty, which is also important[35,72-74]; the data on the impact of inequality are clear, although debate around mechanisms remains[59,174].

5. Collective impact of a wide range of players

As we redesign the way in which we think about mental health in New Zealand, it is important to remember that this is not an issue just for the Ministry of Health, DHBs, and the rest of the health sector, but involves other Ministries as well: MSD, Oranga Tamariki, Education, Justice, Police, Housing, etc. Further, it is essential that we remember that this is not an issue just for government and government services but involves individuals, families, whanau, Iwi, NGOs, community groups, employers, etc.

6. Housing

Lack of housing is a high-level stressor for essentially all humans, especially children[175-178] – and is more common among those with mental illness, whether as contributory cause or consequence. Reducing the burden of homelessness is an important part of any coherent multi-agency programme that aims to ameliorate the burden of mental illness in New Zealand. It has been shown in a number of studies – both "Housing First" (see below) and other approaches – that providing permanent supportive housing reduces costs across a variety of other social services[179-181] and shows some evidence of improved mental health[181-183], including in New Zealand[184], as well as reducing alcohol use/misuse[185,186] though not the use of illicit drugs[185,187]. There may be differences that depend on severity of

mental illness, with those with the most impairment doing better with a full supportive housing programme[188]. Affordability is relevant, with an Australian study showing that unaffordable housing probably reduced mental health[189]. A number of studies have been done as RCTs[181,182,185] but there may be some need for tightening the evidence base[190]. Also see the Permanent Supportive Housing Evidence-Based Practices website of the US Substance Abuse and Mental Health Services Administration: (https://store.samhsa.gov/product/Permanent-Supportive-Housing-Evidence-Based-Practices-EBP-KIT-/SMA10-4510). "Housing First" programmes (which do not require treatment of mental illness or abstinence from drugs and alcohol as a condition of housing) produce improved housing stability[191,192] and result in less time in psychiatric hospitals and lower costs than programmes requiring treatment or sobriety[192]. Studies in Canada undertaken as RCTs have produced strong evidence in support of "Housing First"[181,182,185] and this is now Canadian national policy: (https://www.canada.ca/en/employment-social-development/programs/communities/homelessness/understanding.html).

7. A holistic, people-centred approach

The new system needs to be tailored to different needs and situations (for example complex life situations, cultural differences) and designed to be better and easier for people to access, not better and easier for the institutions that provide services. Particularly, we must eliminate disconnected, incoherent services and rather provide a net of resources within reach of all individuals. Crucially, we must ensure a predictable, preferably single, point of contact for services for each individual. This will not only make life easier for those in distress and with the greatest need but should allow synergies in the way in which services are provided: education, supporting benefits, physical health, housing, support at times of crime and violence, etc.

8. Police/Courts/Prison

These are essential in the management of mental distress in the community but they should not be the first tool to be used. Further, to deal with many community mental-health emergencies, we might think of establishing a crisis-response team with a wider set of skills. This team could have a mandate to respond rapidly with appropriate intervention and support when triggered by specific events (e.g., family violence, child abuse) or needs (clear emotional distress). Skills *on call* might include:

a. Mental health worker;
b. Tamariki Ora worker;
c. Other Iwi-based support workers;
d. Social worker;
e. Nurse/doctor;
f. Police;
g. Teacher;
h. Sport or other coaches.

A really important distinction for first responders to be able to make in the setting of behavioural turmoil is that between family and social distress on the one hand and mental illness on the other.

The lack of evidence-based early-intervention programmes[193-200] and programmes to address childhood trauma[201,202], the lack of treatment programmes for family violence[202,203], and too few education-support services to keep at-risk children in school [127,160,204,205] all increase the likelihood that young people will end up in prison[206].

The role of prisons themselves in the development and exacerbation of mental health disorders needs to be thoroughly examined and remediated. We no longer physically punish criminals, but deprivation of freedom and, crucially, isolation dramatically affect the mental and spiritual aspects of a person. There is awareness – in Corrections[207] and especially in the Office of the Ombudsman – of the need to attend to the mental health of prisoners, of the damaging effects of the use of restraint on disturbed prisoners, of the impact of isolation on risk of suicide, and of possible alternatives to restraint and isolation[208]. However, what is missing from our thinking is the way in which, for those with pre-existing mental disorder (diagnosed or not) prison acts as a further stressor both by the nature of imprisonment itself (loss of freedom, separation from family/whanau and community) and by the risk of violence, which also reprises the early-life experiences of many vulnerable individuals.

In line with the recent work by the science advisors, led by A/Prof Ian Lambie and Sir Peter Gluckman, we need: to grapple with the nexus across mental disorder, deprivation, and crime; to understand and employ preventive measures across the lifecourse, with due attention to family violence, inequalities, and the pathways into and out of prison; and to explore alternatives to our current approaches to bail and remand, to the duration of sentences, and indeed, to prison itself (http://www.pmcsa.org.nz/wp-content/uploads/Using-evidence-to-build-a-better-justice-system.pdf). The Ombudsman[208] has also recently reminded us of previous recommendations[209] regarding the needs for an audit of healthcare needs in institutions and for the development of a comprehensive national policy for access to healthcare and mental healthcare services across the criminal justice system.

9. Funding a redesigned mental-health service

There are a variety of approaches to estimating the cost of funding an improved mental-health programme for New Zealand, which we can apply in more detail as we flesh out our approach. As Layard and others have shown, substantial attention to prevention and the full and supportive treatment of mental illness will, in many cases, pay for itself in the form of productivity that is not lost and welfare benefits that are not claimed[9,33,55,210]. There is some reason for cautious optimism regarding the cost-effectiveness of treatment for psychosis[211-214] and perhaps youth mental health services[215], but focussed work needs to be done in New Zealand. As Gavin Andrews has pointed out (personal communication to R. Poulton), in the case of cancer, availability of money has allowed researchers and clinicians to make major inroads toward turning lethal diseases into treatable entities; we are not there with mental illness, partly because not enough is known and partly because patients too seldom become partners in the search for cure and management.

10. Workforce

As already noted, we do not have sufficient trained personnel to deal with the burden of mental illness in New Zealand. In the UK, there was a specific and focussed push to remedy the similar huge gap they faced[216-218]. We need to adapt this IAPT (Improving Access to

Psychological Therapies) approach to train up an appropriate cadre of professionals in addition to moving toward the use of eBased therapies, as noted above. Again, as already noted, there is a need for further expanding the skills of the workforce – and for some groups expanding the workforce itself – in ECE, primary and secondary teachers, midwives and Plunket staff, Corrections, Work and Income staff. This training and expansion of services needs extensive coordination between the relevant ministries and not only DHBs but also NGOs, Iwi, and other providers. In the end, we should have teams that provide a service net with the capacity to deal with mental illness – and support of mental health – at all levels across New Zealand.

11. Evaluation

The narrative suggests a number of approaches that will need to be further developed between and across agencies. Some are aimed at reducing future demand by improving mental wellbeing, others at earlier and broader intervention, and still others as issues within the delivery of services to currently diagnosed patients. These interventions will be a mix of well proven approaches from developmental and psychological sciences and others will be more normatively based. They also need in many cases to be merged with current services or will involve change in current servcies. Accordingly, an adaptive approach must be taken in which both baseline data and continuing evaluation of the direct and indirect effects and costs and benefits of each initiative are seen as essential rather than optional.

The need for evaluation strongly emphasizes the need for a comprehensive baseline survey of the current state of both mental disorder – including substance use and addiction – and mental wellness across New Zealand society. The value of these baseline data can be greatly enhanced by integration with relevant data in the IDI.

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