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oxygen

AN INVESTMENT FRAMEWORK TO BUILD MENTAL CAPITAL IN YOUNG PEOPLE

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ABSTRACT

The mental capital of the world's young people is essential to global economic development. However, formation of this essential resource is jeopardised by the high prevalence and costly impacts of mental disorders, which predominantly emerge early in life. To reduce the impact of these disorders on mental capital formation, we recommend tackling the social determinants of mental disorders, enhancing youth mental health services and improving social supports for young people with mental health problems. Barriers to achieving these objectives exist in low, middle and high-income country contexts in the form of resource constraints, an incomplete evidence base and the complexity of systems that require reform. However, these challenges can be overcome through a combination of scaling up investment in youth mental health programmes that have proven to be cost effective; building the capabilities of youth mental health advocates; embedding structural supports for system development, including collaboration across many sectors of the economy; and broadening the scope and breadth of economic research in youth mental health.

Goal		**Reduce the impact of mental disorders on mental capital formation in young people globally**		
Objectives		**Tackle social determinants**	**Scale up youth mental health services**	**Enhance social supports for young people with mental disorders**
Investments	**Systems reengineering**	Support the development and validation of complex systems models addressing issues of social determinants and health systems design, e.g. encouraging open science modelling frameworks and resourcing long term, international collaborations. Quantify and mitigate risks associated with implementation failure, e.g. through market mechanisms such as social impact bonds. Scale up models of care and improvement strategies that: • address discontinuity and fragmentation in the provision of services, particularly the transition between adolescent and adult services; • embed a youth friendly culture and public identity; • holistically integrate physical health, substance use and vocational support services with mental health care; • pool funding from multiple funders and sectors; and • implement high quality data systems, model fidelity supports and research partnerships.		
	Priority setting	Embed structural supports for systems development, e.g. health technology assessment and systematic development of economic evidence base and digital decision aids for policymakers. Scale up cost-effective youth mental health promotion, prevention and intervention programmes, regulations and legislation.		
	Resource mobilisation	Support economic evaluation research that addresses costs and outcomes relevant to non-traditional sources of funding for youth mental health, e.g. non-health sectors and employers. Build capacity of youth mental health advocates.		
Barriers to change		Inadequate resources	Incomplete evidence	Complex systems
Problem		Global mental capital is put at risk by highly prevalent and costly mental disorders, which emerge mostly in early life.		

INTRODUCTION

Global economic development is closely entwined with the mental capital of young people globally. Mental capital 'encompasses a person's cognitive and emotional resources, including their cognitive ability, how flexible and efficient they are at learning, and their 'emotional intelligence', such as their social skills and resilience in the face of stress.[1] Adolescence and young adulthood is a key developmental period during the life course when mental capital is formed[2, 3]. 50% of mental disorders which impede acquisition of mental capital occur by age 14, with 75% occurring by age 24[4]. Such disruptions to mental capital accumulation early in life adversely impact the future life chances of individuals and the economic wellbeing of societies.

Mental capital formation has a critical impact on a young person's success in education, skills acquisition and the transition to employment[2]. Impaired mental capital accumulation can negatively impact on the chances of building long-term relationships or living independently and increase the risks of being vulnerable to poverty and crime[1]. Poor mental health also increases the risks and costs of poor physical health[5, 6].

Many of these disrupted life trajectories involve substantial economic costs. There is much evidence from high-income contexts on the long term adverse impacts of poor mental health on education, with some evidence now seen in low and middle income country settings[7]. One example of this is the association between poor mental health and the increased likelihood of having to repeat a year at school. We have used data from ongoing analysis of a Brazilian cohort of young disadvantaged people to model costs to the education system of untreated poor mental health. The expected cost (reported in 2019 International Dollars) of repeat school years per young person without mental health problems at baseline is $3,516. This compares with higher costs

of $4,407, $4,796, $6,185 and $6,345 for young people with fear, distress, externalising and comorbid mental disorders, respectively (the model we have used is further detailed in an annex to this report).

Of course, the benefits of addressing risks to mental capital formation are not restricted to impacts on education alone. The high prevalence of mental disorders in young people means that the aggregate economic costs of impaired mental capital acquisition are substantial in both resource consumption and lost productivity across the life course. A previous World Economic Forum report estimated the global cost of mental health conditions at between US$2·5–8·5 trillion in 2010 and predicted that these costs would double by 2030[8]; moreover, the majority of these estimated costs were incurred through lost economic opportunity rather than costs to heath systems. The World Bank's World Development Report in 2015 *Mind, Society and Behaviour*, emphasised the links between economic development, cognitive capacity and mental capital[9]. Subsequently a high-level meeting hosted in Washington by the World Bank in partnership with the World Health Organisation called on governments and agencies to bring mental health 'out of the shadows', and to view it as a global development priority[10].

As there are substantial short and long-term costs associated with poor mental capital, even a small reduction in the onset and/or severity of mental health problems could be attractive to policy makers, given substantial costs to health, social welfare and many other sectors of the economy. Long term exclusion from employment and lost opportunities to stay in higher education may be averted. This investment framework identifies objectives for reducing the impact of youth mental disorders on mental capital formation; identifies challenges to realising these goals; and proposes immediate and long-term actions for addressing these challenges in high, middle and low-income country contexts

REDUCING THE IMPACT OF YOUTH MENTAL DISORDERS ON MENTAL CAPITAL FORMATION

To protect mental capital formation and address the negative impacts of mental disorders requires the pursuit of three objectives:

- addressing the social determinants of mental capital formation and mental disorder in young people;
- strengthening youth mental health systems; and
- supporting young people with mental disorders to achieve better life outcomes.

ADDRESS SOCIAL DETERMINANTS OF MENTAL CAPITAL FORMATION AND MENTAL DISORDER IN YOUNG PEOPLE

The environmental, economic and social circumstances of children and young people shape their accumulation of mental capital and risk of experiencing a mental disorder. Many actions focused on these social determinants designed to strengthen mental capital and prevent or delay initial onset of mental disorder should be universal, proportionate to need, multi-component and involve multiple sectors beyond health systems[11], such as social welfare, education, leisure and housing. In addition, further targeted measures may be needed to address the needs of particular high-risk groups, such as young people who have parents living with mental health problems.

One example of the social determinants of mental disorder that is particularly important to young people across the globe is bullying. Bullying affects considerable numbers of young people, for instance, rates in US high schools are thought to be around 15% and 25% for young men and women respectively[12], while teenagers reporting experience of bullying in Central and South American countries ranged from 19% in Uruguay and Costa Rica to almost 48% in Peru[13]. A growing number of countries have recognised the need to curb bullying among children in legislation and policy documents, with some investing in universal programmes to tackle this issue[14, 15].

Tackling bullying is potentially one way of protecting the mental capital of young people. The case for action has been strengthened by evidence from longitudinal data from several countries around the world suggesting that children and young people who are bullied have a higher risk of developing mental health problems, both as young people and continuing well into adulthood [16]. Evidence from Great Britain, for example, suggests that young people who are frequently bullied are more than 2.5 times more likely to use mental health services than other young people, both in childhood and adolescence. Even in midlife, up to aged 50, they still have a 30% higher likelihood of using services compared to their non-bullied peers[17]. In addition to these long-term additional costs to health systems, bullying may result in a greater use of school and specialist child mental health services.

Persistent bullying can also affect school performance and can increase truancy. This may also mean that the police, social welfare services and families have to spend time either looking for or supporting young people outside of the school system. There are also impacts on educational attainment which in turn may ultimately lead to poorer employment prospects in adulthood and lower earnings when in employment[18, 19]. One reason for the persistence of impact into adulthood may also be because young people who have been bullied may remain more vulnerable to being bullied as

adults. Furthermore, early adverse experiences can increase vulnerabilities to mental health problems across the life course.

STRENGTHENING YOUTH MENTAL HEALTH SYSTEMS

Investment in evidence-informed effective actions to promote better mental health and reduce the impacts of mental disorders in young people carries with it the promise of long-term positive impacts in all societies. Reforming and scaling up mental health services for young people in particular has been identified as a major priority in global mental health[20]. Protecting and improving mental health and wellbeing for young people of all ages has also been recognised more widely as one of the objectives of the United Nation's Sustainable Development Goals on health and wellbeing[21].

There are many interventions of proven efficacy for young people with mental health problems, but mental health systems worldwide are typically under-resourced, often fragmented and badly co-ordinated with other agencies, and perform poorly at providing equitable access to effective interventions[22, 23]. Investing in scaling up mental health systems worldwide therefore has the potential to produce major social and economic returns that go well beyond health care systems[24, 25]. However, investment alone is likely to be insufficient as the population health impacts of additional mental health expenditures in a number of countries have fallen short of that promised by intervention research[26]. New investment needs to prioritise models of mental health care that have proven to be cost effective for young people, ensure that they are feasible to implement in specific country settings and then be supported by appropriate skilled implementation. It is notable that some of the most successful reforms in youth mental health care service delivery are supported by a strong culture of monitoring and evaluation and explicitly define and support faithful service model implementation[27, 28].

SUPPORTING YOUNG PEOPLE WITH MENTAL DISORDERS TO ACHIEVE BETTER LIFE OUTCOMES

In addition to treatment that addresses their mental health symptoms, young people with mental disorders (and their families) require supportive systems that will help them avoid many of the negative life outcomes for which they have elevated risk. Some of these supports can be provided by or linked with mental health services, but others require population level public health and social policy approaches.

A good example of this is the set of measures to prevent deliberate self-harm and suicide by young people. Adolescent self-harm is a major public health problem, with the frequency of hospital treated self-harm increasing globally[29]. Previous self-harm is also associated with a higher risk of a subsequent fatal suicidal event[30]. Self-harm and suicide prevention strategies for young people include assessment, referral and support services in mental health clinic and emergency departments; skills training in schools and youth settings; creating safety barriers in public amenities; and implementing regulations to restrict access to means.

Social determinants such as bullying are also associated with increased risks of deliberate self-harm and suicidal behaviour in different country contexts. For instance, both suicidal behaviour (planning and ideation) and suicidal events were associated with a significantly greater level of bullying in surveys of young people in five Latin American countries[13]. Similar elevated levels of suicidal behaviour in young people who have been bullied can also be seen in Korea, where the cultural context is very different[31].

Sustained employment is a key life outcome; not only does it help promote empowerment and independence of younger people, but if undertaken in a good working environment can help promote and protect mental health. Specialist supported employment services, such as Individual Placement and Support (IPS), often provided in collaboration between employment and welfare services, can help support young people make the transition into the workplace and sustain their employment. If well monitored and delivered as intended they can be both effective and cost effective, even in situations where the labour market is weak or if disability benefits for those unable to work are high[32].

BARRIERS TO CHANGE

To reduce the risk of mental disorders, improve treatment when they arise and mitigate their impact on life chances a number of barriers to change must be addressed, including:

- resource constraints;
- evidence deficits; and
- system complexity.

RESOURCE CONSTRAINTS

Financial resources, and other resources such as the available workforce and infrastructure are limited even in the wealthiest of societies. Policy makers are not able to meet all needs and wants expressed by the populations they serve. Using resources in one way will likely mean having less available for other activities. This necessitates very careful decision-making to ensure that these limited resources are used to their best effect.

In all societies it is also important to win public consent for the types of large-scale public investments that are likely to be required to close the unmet gap in the need for mental health care

for young people. For too long, investment in mental health has been viewed as a luxury. Something to be pursued only in high-income economies less likely to be troubled by high rates of mortality from communicable disease, mass poverty, political instability or limited infrastructure for economic development. Moreover, despite a growing body of evidence on the negative impacts of poor mental health in low and middle-income country settings, much of the welcome interest in mental health this century has been concentrated in a small number of high-income countries.

Even within these higher income countries, it is unlikely that the financing requirement for more effective systems to support the mental health of young people can be found from within public health budgets alone. It will also mean investing in measures to address the stigma associated with mental illness, which may prevent young people from seeking help even when services are available. Moreover, effective action cannot be implemented solely within a health system, it requires collaboration with other sectors that usually do not see mental health as an important policy objective. This is particularly important in countries with weak health systems. This means they may be reluctant to commit resources to mental health, even if compensated for doing so by health agencies. In turn, this implies collecting and disseminating more evidence that arises from supporting the mental health of young people, to those other sectors of the economy.

EVIDENCE DEFICITS

Policymakers need to balance the three goals of operating within their budget constraints, maximising value for money and promoting equity, whatever their resource context. These goals can be in conflict as cost-effectiveness does not mean that an intervention is cost saving, nor does it assess the impact on equity. Some value for money programmes may be very expensive, particularly if implemented population wide, even if programmes are cost saving it is likely that most of the benefits will be gained outside of the health system. Implementation of any programme potentially can widen inequalities, e.g. programmes only implemented in affluent schools, or which work better for boys compared with girls, could lead to a widening of inequalities in health and life chance outcomes.

High quality economic analyses are required to appropriately inform decisions involving consideration of budget-impact, value for money and equity. Economics can help with understanding the resource and cost implications of developing and delivering effective interventions for their intended target population. This includes determining resource requirements against what is already available (e.g. in terms of a suitably trained workforce, infrastructure for prevention or treatment or input from other sectors such as support from volunteers) and what new investment might be needed (e.g. additional legislation, infrastructure, further staff training or recruitment). When both physical resources and budgets are generally limited, this then links to what is the most critical question where economics can provide input, namely whether investing in a particular intervention is a good use of resources compared with other outcomes that could be achieved with the same resources/budget. This is a question about value for money or cost-effectiveness. This means linking together information about what an intervention costs to deliver and its worth in terms of what it achieves, and comparing that with the equivalent information for alternative uses of the same resources/budget. Economic analyses can also consider the distribution of benefits and costs to describe the anticipated equity impact of alternative policy options.

Although the evidence base relating to the economics of the mental health of young people is now quite substantial[3, 33, 34], there are many gaps in knowledge that require further strengthening. Even where there is robust evidence available on the effectiveness of interventions from comparable country settings, it is still important for policy makers to look at cost-effectiveness in their own particular context. For instance, if policy makers in Ireland choose to implement a youth mental health approach shown to be cost-effective in the Netherlands, they still need to consider whether differences in infrastructure or the way in which youth mental health services are organised may lead to a different conclusion. To do this, rather than investing in expensive additional trials, economic modelling approaches can be used to draw on data from different country contexts on likely levels of uptake and sustained engagement, as well as effect size, and then synthesise these with appropriate data on resource utilisation and cost in a different country context[35]. This approach has been used by policy maker in several high-income countries, including the United Kingdom (UK) [36, 37].

Epidemiological and effectiveness used in economic models of mental health is often more abundant in high income contexts and may not be generalizable to low and middle income country contexts[38]. For instance, there is virtually no evidence base on youth mental health for most countries that were previously part of the Soviet Union. Furthermore, the limited evidence base from effectiveness studies and economic evaluations in low and middle income country contexts is often insufficient to generalise findings, even to countries with similar resource levels[39, 40]. Additionally, there is a general need across healthcare for economic evaluations to better account for demand and supply constraints, particularly in low and middle income country contexts[41].

This case for investment needs to be made to multiple funders in different sectors including Government, education, employment, justice and

welfare departments, as well as private sector actors such as employers and insurers, who have different interests. While there are examples of broader perspectives, that go beyond health system costs, that are regularly used in economic evaluation in the mental health sphere, most economic evaluations in youth mental health do to not adopt multiple perspectives on costs[33]. More importantly, they do not consider multiple outcomes, e.g. funders from the education sector may be more interested in the impact of youth mental health interventions on academic achievement or school atmosphere than they are on improvements in mental health.

This means that the economic evaluation method used may need to be tailored to funder type. Cost utility analyses, which explore the cost per Quality Adjusted Life Year gained, are often considered to be the most appropriate way of conducting an economic evaluation for a healthcare decision-maker as it allows investments in youth mental health to be compared with other health investments. However, different decision-makers may prefer for other benefits to be valued alongside health outcomes (arguing for cost-benefit analyses that value all costs and benefits monetarily). A variant on this approach is the return on investment analyses increasingly being conducted to present evidence on the value of investments in mental health, in both high and low-income country settings. These studies compare the monetary values of costs averted to the monetary value of investing in programmes. Unlike cost benefit analyses, they usually do not attempt to also put a monetary value on outcomes such as improvement in both life expectancy and/or quality of life, as well as other impacts that are hard to value, such as improvement levels of inclusion in society.

SYSTEM COMPLEXITY

As highlighted earlier, a common characteristic of mental health systems worldwide is they are generally poorly financed and organised. Investing additional resources in appropriate individual programmes is a good start to improving the performance of these systems. However, substantive re-engineering of these systems will depend on better understanding of system behaviours and interdependencies.

Due to the complexity of these systems, developing such insight is a medium to long term undertaking. Addressing the challenge of generalising economic studies in mental health highlighted previously would be aided by a better understanding of the way that the spatial environment shapes the behaviour of mental health systems, however, research on this remains relatively underdeveloped[42]. Similarly, developing integrated multi-component and whole of society policies to address the social determinants of mental disorder is hindered by an evidence base with methodological challenges and inconsistent findings[43].

In comparison to medical devices or pharmaceuticals, interventions largely based on interpersonal communications, e.g. talking therapies, may be subject to much greater variance in how they are delivered. There is significant heterogeneity in the beliefs of youth mental health clinicians worldwide about the most appropriate care requirements for young people with emerging mental disorders[44]. In many low and middle-income countries some of these therapies are only feasible at scale if delivered by primary health care workers or lay counsellors, rather than mental health specialists, but insufficient focus is devoted to this type of system complexity[45]. Complex multi-component interventions, which are common in mental health, may carry greater risk of implementation failure, a risk potentially compounded by the unsatisfactory rates of guideline concordant care that mental health has in common with physical medicine[46]. Furthermore, in youth mental health, there is a major emphasis on making services accessible and attractive to young people in order to encourage help-seeking and maintain service engagement. More research into preferences, behaviours and provider response to incentives is required to better align the behaviours of patients and clinicians with system goals.

INVESTMENT FRAMEWORK

To overcome these barriers to change, we suggest an investment framework that combines short, medium and long-term measures in three domains of action:

- resource mobilisation;
- priority setting infrastructure; and
- Systems reengineering.

RESOURCE MOBILISATION

Securing much needed additional investment in building the mental capital of young people globally requires a twin prong approach of advocacy and economic evidence development.

An immediate investment priority is to support advocacy efforts designed to garner policy maker and societal endorsement for what may be substantial redirections of public funds towards supporting the mental health of young people. Examples of youth mental health advocacy campaigns that successfully secured major new public investments[47] could potentially inform the conduct of similar campaigns in other contexts. Although securing new investment may be a key focus of such advocacy effort, it has been argued that basing such arguments principally on economics could be a mistake and that such campaigns should instead be values and rights based[48].

The reluctance to think about youth mental health in terms of its economic impact is understandable. Some proponents for better mental health would

argue that the profound adverse impacts of poor mental health should be sufficient to lead to policy change. Indeed, while focusing on the moral imperative to address mental health is sometimes sufficient, the economic imperative is also something that policy makers will have to consider. We would argue that this provides opportunities rather than a challenge. The economic imperative can go hand in hand with the moral imperative for action and economic arguments can help increase the appetite for investing more in youth mental health. We can point to countries such as Australia and the UK where economic evidence has and continues to be a catalyst for investment in mental health[49-51].

Over the medium term, we recommend investing in a programme of economic evaluation research that is more fit for the purpose of securing youth mental health investments from non-traditional sources. Many of the benefits of preventing poor mental health are enjoyed outside of the health sector, such as increased participation in the workforce and higher levels of educational attainment. Cost-Benefit and Return on Investment analyses allow decision makers to compare investments in the youth mental health system with investments in other areas of the economy such as industrial development, education or housing. Investing in expanding the use of these techniques in youth mental health would mean that the economic value of investing in programmes outside of the health system to improve mental health, such as poverty alleviation, help with education, having a home or getting a job, can be compared.

Funders of economic evaluations in youth mental health should resource and encourage researchers to deploy both multiple perspectives (at a minimum healthcare and societal) and multiple evaluation techniques (usually Cost-Utility analysis plus at least one of Cost-Benefit or Return on Investment analysis). Such an approach would make research outputs flexible enough so that economic arguments can be tailored to show different sectors the costs and benefits to of investing in youth mental health. For instance, in the context of education, broadening the scope of economic evaluation studies can highlight the benefits (and economic value) of reduced classroom disruption or need for special needs educational support, the prestige of better academic outputs, or better staff retention due to a better school environment for teachers and other staff. Work to estimate the long term costs of social exclusion of young people due to childhood mental health problems in the UK, for example, has been influential in raising the profile of youth mental health among policy makers from diverse political backgrounds[52]. It also demonstrates that these costs can fall across many sectors and be long-lasting, meaning that even policy makers outside of the mental health sector may have a vested interest in seeing more resources invested in youth mental health.

PRIORITY SETTING

Ensuring that, whatever the scale of available resources, budget allocations in youth mental health are well spent requires implementing programmes for which there is good economic evidence and building better systems to support systems level priority setting.

A range of youth mental health programs from low, middle and high-income country contexts have sufficient economic evidence to warrant immediate investment. Prevention and early intervention are critical in all contexts. For instance, measures to help raise awareness of mental health issues, reducing the stigma in seeking help, and having appropriate signposting to services and supports are important. They can also include better mental health literacy in schools[53-55] and more use of digital mediums[56]. Multiple prevention strategies have been found to be cost-effective in modelling exercises in Australia[57] and the UK[36].

In general, for mental health difficulties, the earlier the intervention the greater the return on investment[58]. Pro-active early intervention services for psychosis in general are more effective than usual reactive care pathways[59]. These early psychosis services have been economically evaluated many times in multiple contexts (almost entirely in high income countries) and have been consistently shown to be cost effective[33, 60], especially when broader benefits beyond the health care system, such as impact on participation in work are taken into account[61, 62]. Economic evidence for service models focusing on milder disorders is less bountiful, but a study from the USA suggests integrated primary care[63] youth mental health models may also be cost-effective.

In lower resource contexts there is supportive economic evidence for youth mental health interventions including a financial incentives prevention programme in Uganda[64] and lay-delivered therapy in India[65, 66] and Uganda[67]. There is also some suggestive evidence from Sierra Leone for the potential of interventions targeting young people experiencing conflict related trauma to be cost-effective[68].

In an annex to this report, we describe a number of additional modelling exercises that we have undertaken. They include a whole school mental health promotion programme including targeted brief psychological interventions implemented in India, a school-based programme to prevent bullying in England, and youth mental health awareness and suicide prevention programme in South Korea. These models are intended to illustrate different ways in which economics can be used to help, as well as demonstrating that even interventions that only have short term effects can be of economic benefit. All make use of country specific data, but where necessary draw on literature from other contexts. All values are reported in 2019 international dollars.

Illustrative versions of these models, where some model parameters can be adjusted, and additional information for different country contexts are available online.

In the medium term, there should be investment in developing the priority setting infrastructure to support policymaking in youth mental health. Such infrastructure could include health technology assessment agencies taking responsibility for increasing the quantity, quality, methodological consistency, breadth, relevance and generalisability of economic evaluation evidence in youth mental health. At a global level, international organisations such as the World Health Organisation, The United Nations Children's Fund and the World Economic Forum could help foster investment in evaluation in low and middle country contexts where capacity to undertake evaluation may be limited. Other funders of economic research could support this agenda, with an increasing expectation that economic evaluations would be conducted and reported in a manner that allows findings to be customised to different audiences through digital decision aids.

Such decision aids can allow policy makers to look at different potential scenarios, and vary assumptions about effect size, costs and other variables, to account for uncertainty as to whether evidence of effective outcomes seen in controlled studies can be replicated in the real world. Research funders should increasingly support the development of models that can be readily adapted to look at the economic case beyond the primary study setting. This is important in a global context where robust trial data is not always available. This will involve making different assumptions about likely effectiveness and costs based on differences in implementation pathways, as well as differences in sectors that will be responsible for paying for and delivering services in the local context. Ideally, such model adaptation should be undertaken in collaboration with local stakeholders, including young people, which is another activity that economic research funders should explicitly encourage.

SYSTEMS REENGINEERING

The investment target with the highest potential return is supporting the re-engineering of the systems that currently fail to adequately respond to the mental health needs of the world's young people. However, this goal is a long term undertaking and we currently only have fragments of the understanding necessary to confidently embark upon such projects. However, there are a number of foundational pieces of work that can be commenced in the short and medium term.

Some targets for system improvement already have a well understood rationale and can be invested in now. Actions are needed to address discontinuity and fragmentation in the provision of services, particularly the transition between adolescent and adult services. Dedicated supports for young people are needed. Youth mental health services need to be well coordinated with other health services, such as primary care, and wider educational, social-welfare and employment services. Community-based mental health services, specifically tailored to people aged 12 – 25 and delivered outside of traditional clinical settings, are one way of providing appealing community-based supports for young people experiencing mild-to-moderate mental health difficulties.

The Australian enhanced primary mental health care service for young people, headspace, provides a template for on the ground implementation of some of the core recommendations for national mental health systems reform from around the world. These include:

- data systems, model fidelity supports and research partnerships that support evidence concordance and evidence generation;
- integration of physical health, substance use and vocational support services with mental health care as part of a holistic care paradigm;
- pooling of funding from multiple funders and sectors; and
- youth friendly culture and public identity.

To the greatest extent feasible within a resource context, investing in increasing access to services with these components would develop local capacity to implement nationally directed reform measures.

An investment program over the medium term should also address risks posed by implementation failure and the uncertainty attached to long term outcomes. To be mitigated, these risks need to be first understood and quantified. One potential strategy for achieving this goal is to invest in the increased use of innovative financing instruments such as social impact bonds[69] for some prevention and early intervention programmes in youth mental health. The surface attraction of instruments such as these, is that they mobilise additional sources of capital. However, potentially more important is that they are a market mechanism for pricing the risk that promised programme outcomes will not be realised.

Many of the arguments for investing in mental health interventions for young people claim to have long term benefits. However, these long-term gains may not materialise for a range of reasons, with poor implementation a particular risk for complex interventions. Pricing the risk of such negative outcomes will provide better information to policymakers, financially and socially attractive investment opportunities to providers of risk capital, as well as data that can help target strategies to support skilled implementation. Rigorous assessment of these risks may also help identify the circumstances in which it may be less important to achieve enduring health gain. For example, the benefits from schools based programs to prevent

depression typically do not persist greatly beyond 12 months after the program ends[70-72]. However, even if health benefits of programmes are not sustained for more than a few months, when appropriately timed and targeted, they can still have very positive long-term impacts. This may particularly be the case when young people receive mental health supports when they are due to take exams that can have a long-term impact on their future higher education and career prospects.

Finally, major systems level reforms and policies designed to address the social determinants of mental health in young people should be informed by well validated theories about how the complex systems being modified behave. This is a major and long-term undertaking. Although the modelling techniques to undertake this task are becoming increasingly popular in health policy analysis, they remain relatively rare in mental health[73]. Furthermore, much of the data required to build such models is scarce. Investing in broadening the domains pursued by economic research in mental health to currently neglected domains such as preferences, incentive design, provider behaviours and non-treatment related externalities would help address these critical knowledge gaps. Finally, funders of economic research should recognise the long term, iterative, resource intensive and collaborative nature of building and validating these complex systems models. A practical means of doing so is providing explicit support for projects that develop and utilise open science modelling frameworks to encourage the sharing, reuse and refinement of code libraries and data packs[73-75].

CONCLUSION

The economic case for action that leads to better mental health is strong, especially when long term impacts beyond the health system are considered. The challenge now is to seize the opportunity to strengthen and make more use of economic evidence, and see this not just in the light of better youth mental health, but also in terms of an increased supply of human capital. This will be needed to meet major challenges of the new century, including the need for green, clean, economic development, whilst contending with the restructuring of labour markets and increased geo-political uncertainty.

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