Cost Benefit Analysis of the New Zealand National Mental Health Destigmatisation Programme ("Like-Minds Programme").

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Introduction

New Zealand's National mental health destigmatisation programme ("Like-Minds") commenced in 1997 and was one of the first programmes in the world to use public campaigns to counter the stigma associated with mental health.

The problems of stigma suffered by mental health users (those who have already accessed mental health services) are now well documented and the adverse effects of this stigma fall under two categories. Firstly, stigma marginalises users of mental health services reducing employment opportunities, and therefore leading to a quantifiable loss to the New Zealand economy.

The economic loss from employer discrimination is due to what in economics is referred to as an "adverse selection" problem. Employers are uninformed about the loss in productivity – if any – that results from a person having a mental illness. Therefore, employers stigmatise all people with a mental illness as unproductive. This is because people experiencing symptoms of mental illness may have lower levels of productivity and higher absentee rates (Blazer, George, Broadhead, & Tse, 1990; French & Zarkin, 1998; Kessler & Frank, 1997; Rizzo, Abbott and Pashko (1996)) . Moreover, if employees are aware of this stigma, only those with more visible symptoms who are unable to hide their mental illness will tell their employers. Employers are consequently unwilling to employ people who are open about their mental illness. This reduced employment prospects translates into lost economic output as people with mental illness find themselves with lower hours of work or unemployed. We estimate that the employment rate among those identified as having a mental illness is 32% compared with 69% for those without a mental illness (based on figures from Statistics New Zealand, 2008). Moreover, the average number of hours worked for an employee with a mental illness is 29.8 hours per week, compared to 37.5 for the general population (Jensen et al, 2005).

The economic costs of mental health (MH) disorders are also receiving significant attention in the international context. A number of international studies have found the effects to be substantial: for example, mental health problems are the leading cause of early retirement in Germany, while in Switzerland mental health disorders were estimated to cost over €5 billion (in 2004 Euros, this is equivalent to more than $10 billion in 2010 New Zealand Dollars), primarily due to productivity losses. Consequently, many countries have developeda policy response, with initiatives designed to improve the work opportunities of those with mental health disorders present in a large number of European nations including the UK, Ireland, Germany and Sweden (McDaid et al, 2008).

Secondly, the fear of discrimination discourages those with mental health needs from seeking the appropriate treatment in a timely fashion. Instead, they might end up utilizing less cost effective acute care or indeed, only come to the attention of care workers through the criminal justice system. Given that timely intervention is key to cost effective management, delayed access to appropriate services decreases the efficacy of

the overall mental health system. Issues that could be cheaply and successfully dealt with at the primary care level, are ignored, subsequently requiring more expensive acute and ongoing community based care.

It is estimated that up to 857,000 New Zealanders display symptoms of some mental illness (Oakley Browne et al, 2006: 'Te Rau Hinengaro') while only 90,000 self-identify as having a mental illness (2006 Disability survey). This suggests that up to 767,000 New Zealanders could suffer from some undiagnosed mental disorder, many of whom may benefit from treatment. While this needs to be treated with caution given that they are from two separate data sources, it is clear that the potential economic impacts of undiagnosed illness on this scale are significant.

The Like Minds project has cost over $52 million so far. There is little international evidence on the cost-effectiveness or cost-benefit of such programmes. Destigmatisation programmes such as Like-Minds have a plethora of potential benefits. The objective of this report is to estimate the effect on employment and increased use of primary care. It therefore takes a very narrow view of what is the "benefit" based closely on the work by McCrone, Knapp, Henri et al (2007) in the Scottish context and Layard et al (2006).

Our analysis finds a Cost-Benefit ratio of 13.8:1 if the Like Minds project had an impact for the period 2005-2007. This would imply that the total expenditure of $52 million had generated an economic benefit of approximately $720 million.

This might underestimate the true benefit of a Like Minds intervention. McCrone et al (2007) note a number of positive outcomes of destigmatisation which are more difficult to quantify: for example stigma may act as a disincentive to invest in mental health services to the same extent as other health services, or may act as a barrier to children's learning. It should also be noted that we have not attempted to quantify the value of health improvements per se that result from destigmatisation. Nevertheless, these factors may be as, or more important than the indirect economic benefit that we focus on in this study.

Benchmarking

A direct measure of Like-Minds is to measure the change in attitude amongst the population. In order to measure the number of people who changed their mind we utilized a survey of the general population and employers taken in 1997 (prior to the start of the campaign) and again in 2004 (after the campaign had been running for 7 years).

We used the improvement in attitude defined as the percentage increase in those who were willing/ very willing to have people with MH in the community.

We used the full cost of the national advertising campaign to the Ministry (i.e. excluding the cost of the regional campaigns), costed over 1997-2004. This yields a figure of $21.05 per mind changed (which contrasts with a figure of between 3.5 and 5 GBP for a Scottish 'See Me' initiative, as estimated by McCrone et al (2007)). The cost of the national campaign alone is the appropriate comparison as the Scottish 'See Me' campaign

did not include any analogous regional campaigns. Of course, this analysis assumes that the change in attitude is completely due to the programme – which clearly might not be the case.

Table 1 shows the cost per mind changed depending on the extent to which the Like-Minds campaign can be the cause of the change in attitude.

Table 1: Cost per Mind Changed under Various Assumptions of Efficacy

Proportion of change in attitude attributed to like minds	**Advertising cost per mind changed**
100%	$21.05
50%	$42.10
20%	$105.25
10%	$210.49

Cost Benefit Analysis of Countering Stigma

We analyse the costs and benefits of Like Minds with regard to the costs to the health care system and the benefits to the population purely in terms of increased employment. This clearly under-estimates the benefits. However, the benefits in terms of better social interactions and improved value of participation are much more difficult to quantify.

We consider the costs and benefits in three distinct components:

- Increased hours worked by users who are employed due to reduced discrimination by employers;
- Increased work opportunities for those users who are out of work due to improved outcomes from mental health services;
- Greater use of primary care by people with mental health leading to improved rates of recovery and increased employment outcomes.

The decision tree for each of these is shown in Figures 1-3. Preliminary results are shown in table 2.

We utilize the methodology employed by Layard et al (2006) adapted to the present circumstances. The methodology, data and formulae used to calculate the various costs and benefits are provided in the appendix.

Figure 1: Current Users Improved Employment as a Result of Like-Minds

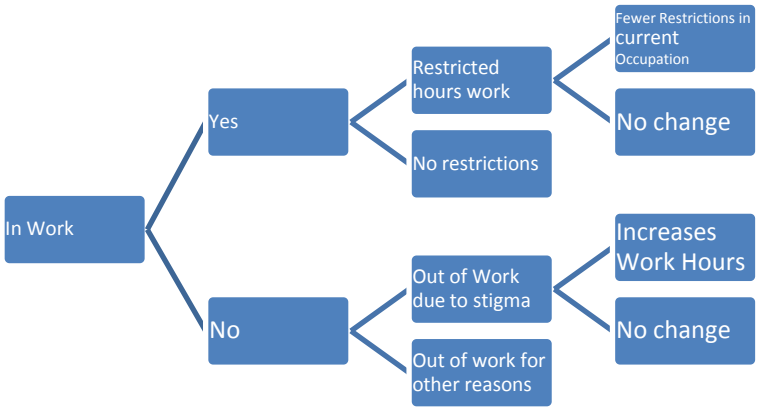

Figure 2: Current Users Improved Employment Outcomes with Mental Health Services

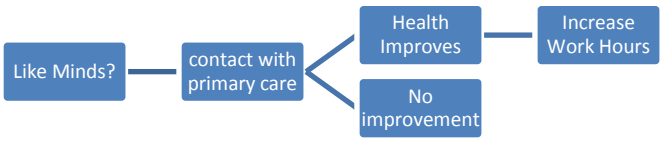

Figure 3: Current Non-Users with Needs use Services more as a Result

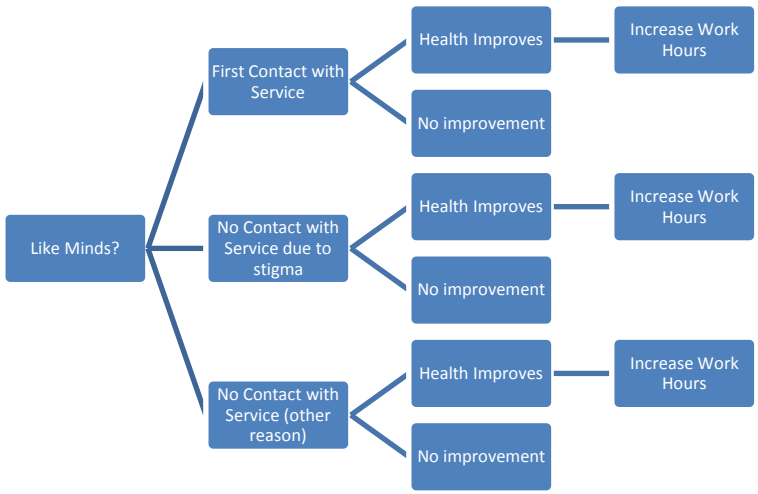

Table 2: Per Capita Costs and Benefits

Group	$ per person with mental illness (net of treatment costs)	-70% sensitivity test (5)	-50% sensitivity test
Current Users improved work chances (1) (6)	$142.26	$42.68	$71.13
Current Users improved outcomes (2) (6)	$35.74	$10.72	$17.87
Current non-users with needs improved outcomes (3) (6)	$25.98	$10.79	$17.99
TOTAL	**$213.98**	**$64.19**	**$106.99**
Cost of Like Minds (1997-2004) per person with mental illness (4)	$30.54	$30.54	$30.54
Cost-Benefit Ratio (Per annum)	**7.0**	**2.1**	**3.5**
Cost-Benefit Ratio (With a 5 year pay-back)	***13.8***	***4.1***	***6.9***

Our baseline figure is a Benefit Cost Ratio (BCR) of around 7:1. This figure assumes that the benefit from the programme *only* came in 1 year (i.e. in 2004) while the costs were paid over the whole programme. This is clearly unrealistic as we would expect there to be long term effects (albeit diminishing over time). If we assumed that the impact of Like Minds lasted for five years where it depreciated at 40% per annum, and utilizing a discount rate of 8%, we would estimate a BCR of 13:1.

The way to interpret this figure is to say that for every dollar spent on Like Minds, we calculate that total of $13 of benefit was generated over a five year period as a result.

However, one ought to note that the changes in attitude observed by the survey might not be fully due to the effects of the Like Minds programme. Due to uncertainty over the extent to which Like Minds is responsible for the change in attitudes and the extent to which the change in attitudes translate into changes in behavior we have also estimated the BCR under the assumptions that Like Minds only generated 30% and 50% respectively of the central estimate of the change in behavior. Even under the most conservative assumption we estimate that the benefits of Like Minds exceed the costs by more than 4:1 (note that this figure does not include the net present value of the benefits over future years).

Conclusion

The analysis in this paper demonstrates that anti-stigmatisation programmes have the potential to generate extremely large economic value. The main source of this value is in increasing the employment opportunities for people with mental illness. Moreover, these benefits are considerably larger than the costs – generating substantial benefit to cost ratios.

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Notes:

(1) Figures for this group estimate the benefits in terms of increased employment and increased work hours due to reduced employer discrimination due to Like Minds, for individuals who self-identify as having a mental illness. The number of individuals in this group is based on the 2006 disability survey. Change in employer attitudes is based on figures from Phoenix Research (Phoenix Research, 2009). These give a 6% increase in the proportion of employers who are willing to employ a person with MH problems, and a 9% increase in the proportion who believe persons with MH problems are able to think intelligently (the latter question is used to estimate the change in numbers on restricted hours). The change in the percentage of those with mental illness who are employed/on restricted hours is assumed to reflect the change in employer attitudes. Figures used to determine the increase in employment rates and work hours as a result of reduced discrimination are derived from the MSD report 'Disability and Work Participation in New Zealand' (Jensen et al, 2005). The figure is given per person with mental illness (as with the figures for the other groups): the number of individuals with mental illness is based on community prevalence rates found in 'Te Rau Hinengaro: The New Zealand Mental Health Survey' (Oakley Browne, Wells and Scott, eds, 2006). The wage per worker is the median wage from the NZ Income Survey (2004).

(2) Figures for this group estimate the benefits from increased employment and reduced absenteeism due to health improvements resulting from increased contact with primary care providers. This group reflects the improvements for individuals who self identify as having a mental illness. The increase in contact with primary care providers is assumed to reflect the perceived change in attitudes of mental health providers (Based on the survey by Phoenix Research, 2009). 16% of mental health service users reported feeling that there had been a decrease in the level of stigma experienced from mental health service providers. We assume that this reflects the change in the number of people in the general public who now think that there is less stigma attached to being a service user. One justification for this is that if users convey to their family and friends that the services are now more accessible. Assumed health improvements as a result of contact with primary care are based on recovery rates found in the literature. Recovery rates are given net of

spontaneous remission rates as we are interested in the increase in recovery compared with the case where there is no increased contact as a result of Like Minds. The recovery rate figures are based on the following sources:

(3)

Depression	Layard (2006), Joyce et al (2002), Ekers et al (2008), Weinberger et al (2008)
Phobia	Davidson (2006), Keller (2006)
Anxiety	Layard (2006)
PTSD	Layard (2006), Bradley et al (2005)
OCD	Belloch et al (2008), Layard (2006)

Prevalence rates for each disorder are based on a study of New Zealand primary care providers (MaGPIe research group, 2003).

Recovery Rates				
Disorder	**3 months**	**~6months**	**~1 year**	**Spontaneous Remission Rate (Baseline)**
Depression	0.6	0.6	0.6	0.3
Phobia	0.5	0.5	0.5	0.3
Anxiety	0.5	0.625	0.672	0.2
PTSD	0.56	0.62	0.62	0.2
OCD	0.55	0.55	0.61	0.05
Weighted Average	**0.542069**	**0.58069**	**0.596966**	**0.251724138**

Using the weighted average of these recovery rates (where the weights are the prevalence), we calculate the following actual recovery rates as a result of contact with Primary Care.

Percentage who recover in months 0-3	29.03%
Percentage (of those unrecovered) who recover in months 3-6	29.03%
Percentage who recover in months 6-12	1.63%

The reduction in unemployment rates as a result of improved health is based on the difference between unemployment rates between those with and without a psychological illness from 'Disability and Work Participation in New Zealand.' The reduction in days of absence as a result of improved health is based on figures for 'days out of role due to disorder' from 'Te Rau Hinengaro.' The Economic Benefit of increased work hours is valued at the average wage (obtained from Statistics New Zealand figures). We utilize Layard's assumption that the user obtains 0.6 months of work for every 1 month she is well. (Layard, 2006).

(4) Figures for this group are based on the same considerations as (2) for persons with unrecognized mental health needs. The number of persons in this group is based on the difference between community prevalence in 'Te Rau Hinengaro' and the number of persons with a self-indentified mental disorder in the 2006 Disability Survey. The percentage seeking primary care treatment as a result of Like Minds is assumed to reflect the 13% increase in the number disagreeing with the statement 'if I got a mental illness I would feel ashamed.'

(5) The total cost of Like Minds 1997-2004 is given as $26,190,668 based on figures provided by the Ministry of Health (pers. comm.)

(6) For sensitivity testing the figures for increased employment, increased work hours and increased contact with primary care (each based on changes in survey responses 1997-2004) are multiplied by 0.3 and 0.5 respectively and outcome measures are re-calculated accordingly. The following table gives the baseline change in each survey response and the 50% and 30% sensitivity figures:

Question	**Baseline**	**50%**	**30%**
Increase in percentage of employers responding 'Willing/Very willing' to the question 'How willing are you to have a person with an MH disorder work for you'	6%	3%	2%
Decrease in percentage of employers disagreeing that persons with an MH disorder can 'think intelligently'	9%	5%	3%
Percentage of MH service users who think there has been a reduction in discrimination from MH service providers	16%	8%	5%
Change in percentage of survey respondents who disagree with 'If I got a mental illness I would feel ashamed.'	18%	9%	5%

(7) The benefit of primary care is net of the costs of care. That is, for every early contact with primary care we assume recovery rates as given in note (2) above, and subtract from the increased value of employment the expected costs of primary care. The cost per user of primary services is based on the following costs

Cost	**Source**
GP subsidies	Ministry of Health (2009) – capitation rates, MaGPIe Research Group (2003) – average number of GP visits per patient
GP fees paid by the patient	Ministry of Health (2004), 'General Practitioner Fees Information.'
PHARMAC subsidies for medication	PHARMAC (2009), 'Review of Expenditure 2008/9.'

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