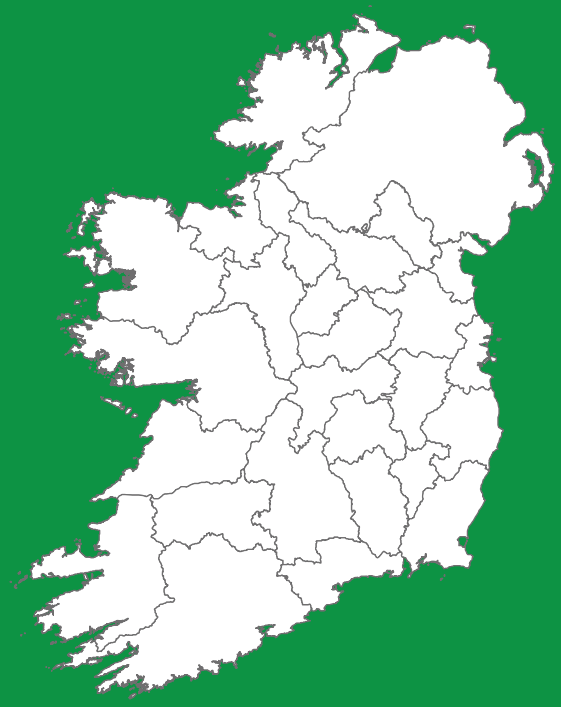
Economic Justification of the ***Jigsaw*** Model of Early Intervention & Prevention

2013



Cost Benefit Analysis

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Contents

Introduction to the Economic Justification

Headstrong's overall mission is to change how Ireland thinks about young people's mental health through research, advocacy and service development. The Jigsaw model of service delivery is Headstrong's response to the challenge of transforming how young people in Ireland access mental health support and attain positive developmental outcomes. Jigsaw brings services and supports together to insure that every young person has **one good adult** in their life to support them, whatever their level of need. Thus, Jigsaw seeks to: (1) ensure access to youth friendly integrated mental health supports when and where young people need them, (2) build the confidence and capacity of front line workers to directly support young people and to connect them to Jigsaw, and, (3) promote community awareness around youth mental health to enhance understanding of young people and the risk and protective factors that contribute to their mental health and well-being.

The Jigsaw model is aligned with the philosophy underlying the Health Service Executive's (HSE) Primary Care Strategy, which is defined as "…an approach to care that includes a range of services designed to keep people well, from promotion of health and screening for disease to assessment, diagnosis, treatment and rehabilitation as well as personal social services. The services provide first-level contact that is fully accessible by self-referral and have a strong emphasis on working with communities and individuals to improve their health and social wellbeing." The Primary Care Strategy highlights many of the defining features of the Jigsaw model, including easy access, the need to span a spectrum of activities from mental health promotion to intervention, and the importance of being embedded within communities.

The Jigsaw model offers a service to young people that complements, strengthens, and integrates mental health services and supports currently available within the primary care system. Given that mental health problems are implicated in a great number of primary care consultations (depression is the third most common reason for GP consultation), and that 75% of mental health problems occur prior to age 25 (most emerging during adolescence and young adulthood), investment in youth mental health through a primary care approach makes considerable sense.

The Jigsaw model offers a service to young people that complements, strengthens, and integrates mental health services and supports currently available within the primary care system.

Moreover, Jigsaw is a multi-systemic early intervention and prevention model. In this context, it:

• Promotes **positive mental health** for young people by deploying strategies that target the whole population to enhance strengths, thereby reducing the risk of subsequent negative outcomes (e.g., community-level mental health awareness training);

• Utilizes **universal prevention strategies** designed to address risk factors in the whole population without attempting to discern which young people are at elevated risk (e.g., anti-stigma media campaigns and youth advocacy);

• Targets groups of **young people at risk** for developing mental health difficulties through selective prevention strategies (e.g., Youth Centred Practice training for front-line providers);

• Provides indicated early intervention/prevention supports and services for young people with mild / emerging mental health difficulties (e.g., brief interventions delivered through the Jigsaw Hub).

When fully operational, Jigsaw sites can occupy an important space in the community mental health services "landscape". The programme is not intended to supplant other forms of mental health care and support, but rather to complement and help integrate them. A typical Jigsaw project is designed to have capacity to provide direct support for about 6% of a community's youth population aged 12-25 years, but reaches a far greater number indirectly through capacity-building and outreach.

How are the Four Papers Organised?

This series of papers synthesises a wealth of available information about the mental health of young people in Ireland in order to: (1) describe the prevalence and complexity of mental ill-health among young people in the context of the present system of mental health services and supports, (2) establish some parameters for the direct and indirect economic cost of youth mental ill-health to Irish society, and in particular, to government, (3) specify the costs and presumed benefits of adopting Jigsaw as a key component of the youth mental health "landscape", and, (4) summarise the core economic justification for the model.

Paper 1 (Need Analysis and Programme Description) provides context for the economic evaluation of Jigsaw by discussing issues such as: Why focus on the mental health of young people? What is it like to come of age in 21st century Ireland? What are the mental health needs of young people in Ireland? What is the magnitude of problems experienced by young people? What international evidence exists regarding youth mental health and systems design? What is the Jigsaw model and how does it address these needs? Where does Jigsaw fit in the "landscape" of youth mental health services and supports? What potential impact will it have? What has been accomplished to date? 1

Paper 2 (Economic Burden and Cost to Government Analysis) reviews the literature on estimation of the global burden of ill-health across the world, with specific focus on mental health. Then, extrapolating from Headstrong's My World Survey and other population surveillance data sources, an estimate of the global burden of youth mental ill-health in Ireland is calculated. The paper goes on to describes, in considerable detail, the specific cost to government of youth mental health programmes, services and supports across various expenditure "streams and tributaries" in health, mental health, education, justice, youth services, and related sectors. 2

Paper 3 (Jigsaw Cost Analysis) provides detailed description of the cost of selecting, installing, operating, and supporting a Jigsaw site based on data gleaned from demonstration sites, and establishes cost projections associated with scale-up activities. 3

Paper 4 (Cost Benefit Analysis) discusses how adoption of the Jigsaw programme, as an integrating element of the system of care and support for young people, can avert costs and improve mental health outcomes for young people. It then examines the benefits of a transformed system of services and supports that includes Jigsaw as a core early intervention and prevention element. The paper concludes with specific (and verifiable) hypotheses about how Jigsaw is likely to yield cost offsets that justify its incorporation by government into the system of services and supports. 4

Sources of Savings: Cost Offsets and Systemic Efficiencies

This document presents an economic argument for why government should adopt the Jigsaw model as the core early intervention and prevention component of Ireland's youth mental health system. Jigsaw's model is not intended to supplant other components of the system (such as primary care, CAMHS, AMH, or crisis response), but rather to complement and integrate them.

For the purposes of this economic analysis, a set of verifiable propositions (hypotheses) about specific potential cost offsets will be offered. To the extent possible, estimates of the amount of potential cost savings will be provided.

An important assumption of the economic justification being proposed is that Jigsaw would be fully implemented nationwide. While some of these potential savings and cost offsets are likely to take hold immediately, many require that the model be in full operation before their full benefit would occur, especially those that involve change at the population level.

Reduction in Hospitalization and Recidivism

As discussed in a companion paper[1], a large number of young people are admitted to facilities and institutional settings for mental health reasons annually. In 2010, the number of admissions for the 12-24 age range was 2,527. Of these, 1,203 were first admissions. Assume (very conservatively) that perhaps 10% of these (especially under 18s) might have not required hospitalization if a community-based system with strong case management was in place through the Jigsaw network (121 cases). Assume further that the average length of stay for first time admissions was 30 days. Given an average cost per diem to government of €350, the potential savings for first admissions annually would be €1,207,500. At a somewhat higher level (20% reduction), the cost offset would be €2,530,500.

With respect to re-admissions, two potential areas of saving could accrue. Having an accessible community-based system of support for young people (Jigsaw) would likely help to reduce the re-admission rate as well as reduce the probability of needing to stay as long in hospital because a system of supports would be available for aftercare. Assuming a conservative 15% reduction in the rate of re-admissions (180 cases), and once again using 30 days as the average stay and €909 as the per diem, the potential savings for re-admissions would be €1,890,000. At a somewhat higher level (25%), the potential savings would increase to €3,150,000.

Taken together, the potential annual savings for adoption of the Jigsaw programme in terms of reductions in long stay care would be somewhere between €3,097,500 and €5,680,500.

1 See "Economic Burden and Cost to Government of Youth Mental Ill-Health"

Reduced Presentations to A&Es for Crisis Intervention

In 2011, there were a total of 39 Accident and Emergency (A & E) Wards in Ireland, but a significant number were due to close or be downgraded to urgent care status. There has been great concern about overcrowding in A&Es, although this may be somewhat alleviated with the emergence of minor injuries clinics. In the absence of community-based supports, A&Es are often the only option for young people in crisis. Moreover, a recent study (Okorie, McDonald, Dineen, 2011) found that in one Irish A&E, 19% of all those who attended for crisis intervention psychiatric care were frequent attenders.

There are approximately 1.2 million presentations annually to A&E departments in Ireland (McGregor, 2007). Although the youth population is 16.7%, assume that perhaps 10% of these are young people in the 12-25 age range (about 120,000 presentations). Assume further that possibly a quarter of these presentations are for psychological distress (a likely underestimate), or about 30,000 cases.[2]

Assume that nationwide 10% of these 30,000 presentations could be averted through a community-based early intervention approach, around 3,000 in number. Further assume that the average real cost to government of an A&E visit is €250 (the current charge is €100, clearly an underestimate of the real cost), the state would save about €750,000 per annum in A&E costs.

Reduced Demand on GPs & the Primary Care System

General practitioners in Ireland play an extremely important role in the system of health care. Compared to Northern Ireland, the Republic of Ireland relies far more heavily on GPs for health care delivery, with a population ratio of .70 to 1,000 versus .58 (about 2,400 versus 980 is actual numbers). In addition to the A&E departments, they are the first line of defence for health and mental health tertiary care, in part because a referral from a GP is typically required to gain access to more specialised care.

By their own acknowledgment, GPs are underprepared and often unable to respond to the mental health needs of young people, and even if they were to receive adequate training, many of their practices would not enable them to provide the level of individual support required. With the advent of the emerging primary care system, GPs will be expected to engage in a much higher level of active case coordination.

2 Presentations at A&E by young people for Deliberate Self Harm (DSH) alone average about 2,400.

It is possible that a "perfect storm" is brewing in primary care in Ireland. This is due to a range of factors noted by Thomas and Layte, (2009):

- The average age of GPs is approaching 50;
- A significant percentage of GPs are anticipating early retirement;
- The percentage of medical students intent on becoming GPs is diminishing;
- The traditional approach to primary care by GPs is solo rather than group practice;
- GPs have received little training on how to lead and coordinate the care of patients with other health and non-health professionals;
- There is a large bolus of young people about to enter the primary care system because of the high birth rates in recent years and GPs are not always well-trained in paediatrics;
- GPs are often not well-trained in mental health issues, and especially mental ill health among youth.
- GPs are often not well-trained to deal with alcohol or drug abuse and dependence, both youth mental health issues that are at epidemic levels;
- GPs are not well trained to deal with deliberate self-harm and suicide of patients at any level, but especially when the patients are young people;
- Many of the mental health issues presented by young people are co-morbid with poverty and deprivation connected to the current economic situation in Ireland;
- Primary care doctors are not integrally connected to the social welfare and social protection services in their communities; and,
- There is a mal-distribution of specialty psychiatrists, psychologists and other mental health professionals in Ireland that will likely not improve in the immediate future.

Implementation of Jigsaw would divert young people in distress from full reliance on their GP as the first line of support. In doing so over time and with effect, it seems quite possible that 20% of the current cost attributable to GP and primary care youth mental health services could be offset, the equivalent of €2,000,000 per annum.

Reduced Reliance on Psychiatric Medication

There is reason to believe that, in the absence of a comprehensive community-based system of care, there is a tendency to rely on psychiatric medication. This may be especially true in the instance of young people, who are reluctant to participate in traditional, clinic-based psychotherapeutic intervention.

Assume the estimate of youth psychiatric medication cost of €20m is reasonably accurate. A 5% reduction in medication prescriptions for young people due to the increased availability of youth friendly, brief intervention within an early intervention framework seems well within reason. This would represent an additional cost offset of €1,000,000 per annum.

Reduced Waiting Lists at CAMHS/AMH and Fewer Non-Attendances

There is often a sense of immediacy to the need when a young person is in distress. Their needs are not amenable to being put on a waiting list. Further, it seems likely that the reality of lengthy waiting lists and high rates of non-attendance are likely inter-connected. In all likelihood, non-attendance at appointments are in part attributable to the crisis having either diminished or, equally likely, worsened. In either case, the situation is untenable for the young person, but it also represents a waste of precious human and system resources.

The potential for Jigsaw to reduce waiting lists at more specialised levels of care seems considerable. As little as a 5% improvement in productivity would translate into a €1,650,000 annual savings for government (given the estimated costs of CAMHS services).

More Appropriate Utilisation of Specialty Services (CAMHS, AMH)

It is presumed that a significant number of young people enter the system at a higher level of support than they require. This is a core reason for the establishment of Jigsaw sites. Emerging programme data confirm that brief and early intervention activities can represent an appropriate level of care for a significant number of young people who might otherwise be referred on to higher levels of care.

The programme also has the potential to improve the goodness-of-fit between referrals and level of need at more specialised levels of care. A 5% improvement would translate into a further €1,650,000 annual savings for government.

Referral Pathways, Work Force Stress and Turnover, Case Co-ordination

There is considerable anecdotal evidence of confusion and inconsistency in referral pathways to care and support. It is not uncommon for a young person to receive serial referrals without the prospect of engagement, as different systems deploy a variety of eligibility criteria, causing delay in getting support) and sometimes exclusion). Even when they become engaged, young people can experience fragmented and sometimes contradictory interventions that are not fully responsive to their needs.

While it is impossible to quantify these factors, even a 1% improvement across the four major components of community-based care (Primary Care, CAMHS, and AMH, A&E) would represent a €1,100,000 annual savings.

Reductions in Problem Behaviour

A companion paper[3] provides estimates of the costs to government associated with a range of problem behaviours that young people can engage in. These include costs associated with problem alcohol use, self-harming, accidents and injuries, antisocial behaviour and crime, poor school adjustment, and a range of other risky behaviours. Adding together the costs associated with alcohol-related traffic accidents and crime, early school leaving, drug abuse, deliberate self-harm, suicide, and similar mental health-related behaviours would easily top €100,000,000, as has been shown.

The presence of a comprehensive programme of effective early intervention and prevention in a community has the potential to reduce rates of problem behaviour by promoting help-seeking, facilitating social and emotional literacy, teaching social problem solving skills, and improving choice-making. Even a small reduction in problem behaviour rates attributable to Jigsaw in all of Ireland's communities would result in significant savings to government.

Achieving a 1% reduction over time would be the equivalent of a €1,000,000 in indirect cost savings to government.

Improved Individual and System Efficiencies and Outcomes

The Jigsaw model has the potential to help the mental health system achieve a number of other desirable systemic objectives, such as:

- Achieving a better connection between physical health and mental health interventions;
- Improving the quality of youth mental health services;
- Improving rates of goal attainment for young people;
- Improving the capacity of the mental health workforce;
- Reducing the need for subsequent support through early and effective intervention;
- Creating more effective multidisciplinary responses to child protection issues;
- Engaging parents and families at higher rates;
- Increasing the level of engagement with young people;
- Providing more timely access to services;
- Helping young people become more literate consumer of services;
- Making better use of informational resources (ODM),
- Culture and setting for deploying new and innovative resources (e.g, eHealth)
- Making better use of current resources by sharing resources and expertise;
- Avoiding duplication of services.

Considered in isolation, none of these can be quantified, but in their totality, all would contribute to a more efficient system of mental health support for young people.

3 See: "Need Analysis and Programme Description"

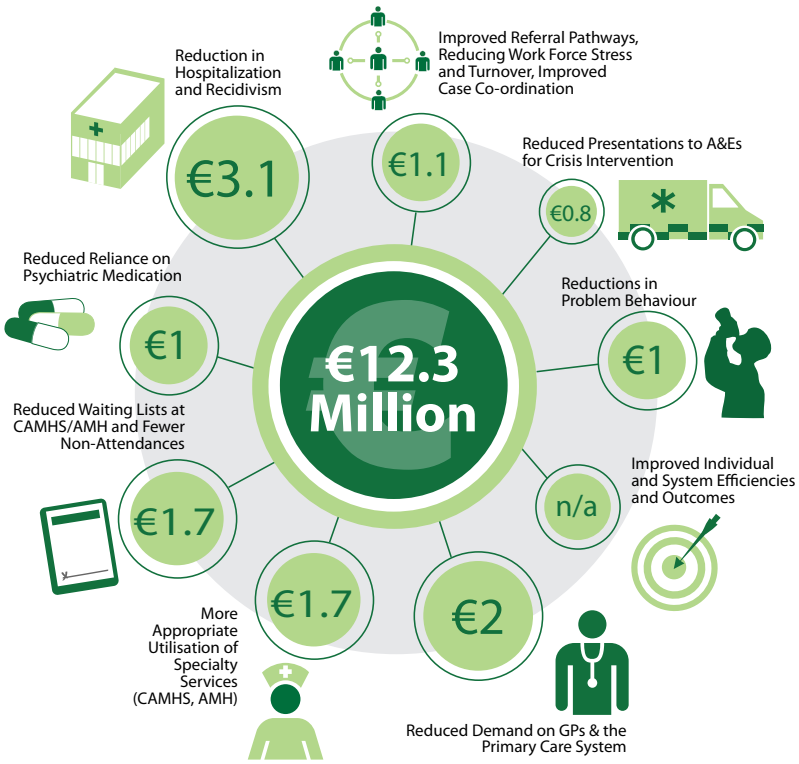
Cost-Benefit Analysis

Adding up all of the potential savings yields a savings (cost offset) for government of over €12.2 million per year, even without taking into account improved outcomes.

Potential Cost Offsets to Government Associated with Full Implementation of the Programme

Reduction in Hospitalization and Recidivism	€3,097,500
Reduced Presentations to A&Es for Crisis Intervention	€750,000
Reduced Demand on GPs & the Primary Care System	€2,000,000
Reduced Reliance on Psychiatric Medication	€1,000,000
Reduced Waiting Lists at CAMHS/AMH and Fewer Non-Attendances	€1,650,000
More Appropriate Utilisation of Specialty Services (CAMHS, AMH)	€1,650,000
Improved Referral Pathways, Reducing Work Force Stress and Turnover, Improved Case Co-ordination	€1,100,000
Reductions in Problem Behaviour	€1,000,000
Improved Individual and System Efficiencies and Outcomes	n/a
Total Potential Savings to Government	**€12,247,500**

Once fully implemented Will the Programme Result in Cost Offsets and Greater Efficiencies?



Sources of Cost Savings to Government Associated with Full Implementation

Improved Individual and System Efficiencies and Outcomes

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Considered in isolation, none of these can be quantified, but in their totality, all would contribute to a more efficient system of mental health support for young people.

In order to properly interpret this finding and its implications for change, it is important to reflect back on the estimated cost to implement the Jigsaw programme. It was estimated that this programme will cost approximately €1 million per site annually in real terms (or €30 million when implemented nationwide).

But Jigsaw is not an entirely new programme that is to be implemented outside of the current service delivery system; It is a transformational approach that relies, at least to some extent, on the re-distribution of current resources and the re-engineering of processes and approaches.

Assume, as has been demonstrated, that in a given community about 15% of the cost would be borne through in-kind contributions. At full national implementation for thirty communities, this would require an annual, on-going allocation (possibly from multiple sources) of approximately €25.5 million.

Given the potential cost offsets described above, which are conservative, (€12,247,500), it can be seen that the true cost for implementing the Jigsaw model nationwide would be approximately €13.2 million, or about €440,000 per site.