The Northern Ireland Association For Mental Health
in collaboration with
The Sainsbury Centre For Mental Health

counting the cost
The Economic and Social Costs of Mental Illness in Northern Ireland

The Sainsbury Centre for Mental Health
Northern Ireland Association for Mental Health
Counting the Cost is the second policy document produced by NIAMH with consultative input from the Sainsbury Centre for Mental Health and following on from our Time for change document (Nov 2003).

The paper presents an estimate of the economic and social costs of mental illness in Northern Ireland, which is described and evaluated under three broad headings:

- **The Costs of Health and Social Care** covering such costs as the services provided by the NHS for people experiencing mental health problems and also the costs of informal care given by family and friends.
- **The Costs of Output Losses** in the economy which result from the negative impact of mental illness on an individual’s ability to work; and
- **The Human Costs of Mental Illness** corresponding to the adverse effects of mental illness on the health related quality of life.

The Northern Ireland Association for Mental Health asked the Sainsbury Centre for Mental Health to analyse data from Northern Ireland to complete a similar exercise to that which was done for England [1].

This paper applies and adapts the methods of analysis used by SCMH [1] in order to derive an equivalent estimate of the costs of mental illness for Northern Ireland.

The economic and social costs of mental illness in Northern Ireland amounted to nearly £3 billion in 2002/03 — more than the total spend on all health and social care for all health conditions.

The paper has been produced within the context of the Association’s strategy to engage with Politicians, Mental Health Professionals, Mental Health Service Users, Managers of Health Trusts and Boards, and the Media.

The aim of this paper is to inform public and political debate about mental health beyond looking specifically at mental health services.

This paper will be submitted to the DHSSPS Review of Mental Health and Learning Disability (N.I.).

The Department of Health has estimated that one in six people will suffer from a medically identified mental illness at any one time i.e. approximately 283,000 people. 1 in 100 of the population will have a serious mental illness [9].

The aim of this paper is to express the burden of mental illness in monetary terms. Few would dispute that the most important costs of mental illness are the intangible ones of suffering, distress and disability and attaching a monetary value to these effects is clearly difficult and even contentious.

However, recent developments in health economics and related disciplines suggest that an analytically defensible attempt can be made.

“The paper presents an estimate of the economic and social costs of mental illness in Northern Ireland, which is described and evaluated under three broad headings...”

**The meaning of the cost measure**

Mental illness inflicts a colossal burden, on individuals, on families and on our society.
Definition of “COSTS” as used in this paper

The term “costs” in this paper should be interpreted in the broadest sense to include any adverse affect of mental illness, whether affecting individuals or society more generally. The costs as measured here do not indicate an aggregate amount of money that is actually spent. The paper will indicate that there are some costs which refer to cash outlays, but others will need to be seen as quantitative measures of welfare or well-being to which a monetary value has been attached. This will be explained in the paper.

The estimates given in this paper are provisional, particularly in the case of human costs which are very much open to improvement in any future analysis. Such an attempt at establishing the costs of mental illness using the common measuring rod of money has obvious inherent limitations which apply to any attempted analysis of the costs of illness. For example, the information on the aggregate costs of illness cannot establish by itself whether devoting more resources to combating a particular condition is worthwhile, as this depends on other factors outside the scope of the analysis such as costs of additional services and their individual effectiveness.

Nevertheless seeking to present figures on the total costs does give a broad indication of the potential benefits to be achieved by attempting to reduce the prevalence and severity of mental illness. The best way to interpret the figures in this paper is as an evaluation of how much better off people would be if there was no mental illness. This includes being better off in terms of income, but also – and more importantly – better off in terms of less pain and suffering and in related dimensions such as reduced risk of premature death.

All of these contribute to improved welfare or well-being and are in principle amenable to monetary evaluation. The costs of mental illness thus correspond to a measure of the benefits to be secured if mental illness were eliminated.

Taken literally, the scenario of no mental illness is of course unrealistic. Figures for the total impact of mental illness on people’s welfare nevertheless have a number of potential uses. The most important of these are as follows:

- **Highlighting the scale of the problem**
  An estimate of the aggregate cost of mental illness gives some measure of how important an issue it is. More awareness among policy-makers and the general public of mental illness can help to promote better informed debate on matters of public policy and more understanding attitudes toward mental illness.

- **Assessing the benefits of action to tackle it**
  The figures provide a broad measure of the potential benefits to be achieved by reducing the prevalence and severity of mental illness. For example, by prevention and more effective methods of treatment.
Informing health and social care spending decisions

Estimates on the costs of mental illness can help to inform debate and decision making about priorities and the use of resources within the NHS, particularly when combined with comparable data on other causes of ill health. Similarly the figures can contribute to decisions on priorities for research and development.

Showing the distribution costs

The figures on the costs of mental illness also give a picture of how the social impacts are distributed across different groups in the population. Such information may help to steer priorities for the allocation within a given total of spending on mental illness, whether this relates to health and social services or on research.

In all these cases, figures for the total impact of mental illness provide a relevant context and background for further discussion and analysis.

Who bears the costs of mental illness in our society?

In some cases this is self-evident from the way in which the costs are defined. For example human costs fall directly on those who suffer from mental health problems, together with their families.

In other cases it is less obvious where the costs fall. For example, in the case of lost output the costs are borne partly by the individual because of lower earnings but also partly by the rest of the population.

A rough calculation of the distributional effects regarding costs suggests that, overall, about 70% of the costs of mental illness fall on the people who experience it and their families and about 30% on the rest of the population mainly in the form of higher taxes or reduced provision of other public services.

Methodological Critique

A possible criticism of the figures is that it is not possible or desirable to evaluate all the costs of illness in monetary terms. If we take this argument at a general level, it is undoubtedly true that there are some issues of public policy for which monetary evaluation is not appropriate because they can be decided on ethical grounds alone. For example in the field of public safety, the exposure of individuals to excessive risks of injury or death is regarded as unacceptable, irrespective of a detailed consideration of costs.

There are however, very many situations where policy decisions, including those about public spending on mental health cannot be made in an absolute way. Very often, expenditure proposals have to be weighed against many other desirable ends, from general health care to crime prevention, defence, transport or the protection of the environment.

Trade-offs are inevitably made between costs of extra spending and the social benefits they can bring. Deriving monetary values for these benefits, where it is feasible to do so, can lead to more transparent decision-making and better policy priorities.
According to an estimate by the Sainsbury Centre for Mental Health, the economic and social costs of mental illness in England amounted to some £77 billion in 2002/03 – more than the total amount spent on the NHS in that year and also more than the aggregate costs of crime [1].

This paper applies and adapts the methods of analysis used in this calculation for England in order to derive an equivalent estimate of the costs of mental illness for Northern Ireland.

The main findings of the analysis are summarised in Figure 1 (page 8), which indicates that the total costs of mental illness in Northern Ireland in 2002/03 were of the order of £2852 million.

Three main cost groupings are identified in the assessment and the total breaks down between these components as follows:

- **Costs of Social Care:** £372 million
  (13.0 per cent of the total) for the costs of care provided for people with mental health problems, whether by the statutory authorities in the form of health and personal social services or by family and friends in the form of informal care;

- **Costs of Output Losses:** £789 million
  (27.7 per cent) for the costs of output losses in the Northern Ireland Economy that result from the adverse effects of mental illness on the capacity of individuals to work;

- **Human Costs:** £1691 million
  (59.3 per cent) for the less tangible but crucially important human costs of mental illness, particularly its impact on the quality of life among those suffering from mental health problems.

The remainder of the paper describes these cost estimates in more detail and concludes with a brief commentary on the possible uses as well as giving some general conclusions.
Total cost of Mental Illness (Northern Ireland, 2002-03) total £2852 million

- Human Costs £1691m, 59%
- Output losses £789m, 28%
- Costs of Care £372m, 13%

Total cost of Health and Social Care (Northern Ireland, 2002-03) total £372 million

- Informal Care £122.21m, 33%
- Public Spending on Mental Health Services £228.9m, 61%
- Other £20.8m, 6%
A. The costs of care

The estimated costs of health and social care provided for people with mental health problems are set out in Figure 2 (page 8). As can be seen, the main elements are public expenditure on mental health services and the imputed costs of informal care.

A1. Public spending on mental health services

Total public spending on health and personal social services for people with mental health problems is estimated at £228.9 million for Northern Ireland in 2002/03, broken down by type of service as follows [2]:

<table>
<thead>
<tr>
<th>PUBLIC HEALTH SPENDING ON MENTAL HEALTH SERVICES</th>
<th>MILLION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital Services</td>
<td>85.6</td>
</tr>
<tr>
<td>Community Health Services</td>
<td>25.4</td>
</tr>
<tr>
<td>Personal Social Services</td>
<td>39.8</td>
</tr>
<tr>
<td>GP Consultations</td>
<td>34.1</td>
</tr>
<tr>
<td>Drug Prescriptions</td>
<td>44.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>228.9</td>
</tr>
</tbody>
</table>

The estimate of £228.9 million compares with a level of public spending on all health and personal social services in Northern Ireland of £2449.6 million in 2002/03 [3]. Mental health thus represented 9.3 per cent of the total. This is significantly lower than the corresponding figure of 11.8 per cent in England. To match the English share, spending on mental health services in Northern Ireland would need to rise by £60.2 million, an increase of 26.3 per cent.

Another way of looking at these figures is to note that public spending on mental health services per head of total population was £160 in England in 2002/03 but only £135 in Northern Ireland.

In contrast, public expenditure on all health and personal social services was £1355 per head in England and £1443 per head in Northern Ireland.

Compared with England, spending per head in Northern Ireland was thus 6.5 per cent higher for health and social services generally but 15.6 per cent lower for mental health services. This difference needs to be seen in the light of evidence noted below, that the overall prevalence of mental health problems appears to be significantly greater in Northern Ireland than in England.
**A2. The costs of informal care**

The 2001 census found that about 185,000 people (more than 10 per cent of the population) provide unpaid care in Northern Ireland, looking after family members, friends and neighbours because of long-term physical or mental ill-health or disability [4].

One in four of these carers provide care for more than 50 hours a week.

Such unpaid work is not included in national income as conventionally measured, but is clearly of value on any broad measure of economic well-being. In recognition of this, the UK Office for National Statistics has recently been working on some experimental accounts which put a monetary value on caring and other forms of unpaid activity by households [5]. This is done by imputing a value to such work on the basis of what it would cost if undertaken as paid work by a third party.

Drawing on the ONS accounts and other sources, it is estimated by the Sainsbury Centre that in England the imputed cost of informal care provided for people with mental health problems amounted to £3.9 billion in 2002/03.

The equivalent figure of £122 million for Northern Ireland shown in Figure 2 (page 8) is based on this estimate for England, allowing for relative population size and also incorporating two other adjustments.

The first of these allows for the fact that average weekly pay is somewhat lower in Northern Ireland than in England, implying that the imputed cost of unpaid work is also lower [6].

The second goes in the opposite direction and reflects evidence from the 2001 census that, compared with England, the total number of carers in Northern Ireland is about 10 per cent higher than might be expected solely on the basis of relative population size [7].

**B. The costs of output losses**

Mental illness has a variety of adverse effects on employment, economic activity and hence the overall level of output in the economy. The scale of costs associated with these various effects is summarised in Figure 3 (page 11).

**A3. Other costs of care**

Other costs of care include: private spending on mental health services, by individuals and by charitable and voluntary organisations; the costs of accommodation for homeless people with mental health problems; and the costs of administration for social security benefits paid to those unable to work or in need of care because of mental illness (the value of the benefits themselves does not count as an economic cost, as the payments are simply a transfer of purchasing power from taxpayers to benefit recipients and do not entail any loss of output or use of resources).

It is estimated that in England the combined cost of these items represents between 5 and 6 per cent of the total costs of health and social care relating to mental illness and in the absence of detailed information it is assumed that the same proportion applies in Northern Ireland.
B1. Sickness absence

Taken together, stress, anxiety and depression constitute the single most important cause of sickness absence from paid employment in the UK, accounting for around 60 million lost working days each year [8]. It is estimated by the Sainsbury Centre that for England in 2002/03, the cost of sick leave attributable to such mental health problems amounted to £3.9 billion. The estimate of £125 million for Northern Ireland shown in Figure 3 above is based on the total for England and takes into account relative workforce size and also differences in the overall prevalence of mental health problems in the two populations of working age.

The estimate of £125 million for Northern Ireland shown in Figure 3 above is based on the total for England and takes into account relative workforce size and also differences in the overall prevalence of mental health problems in the two populations of working age.

This is on the assumption that any variations in prevalence will be directly reflected in the extent of sick leave. Evidence based on GHQ12 results from comparable health surveys indicates that the prevalence of mental ill-health is significantly higher in Northern Ireland [9].

The GHQ12 is a self-completion questionnaire concentrating on the broader components of psychological morbidity, especially anxiety and depression, and a score of 4 or more in the questionnaire corresponds to the average case referred to a psychiatrist.

Survey evidence indicates that in Northern Ireland the proportion of men aged 16-64 scoring 4 or more is 17 per cent compared with 14 per cent in England, while the equivalent figures for women are 27 per cent and 21 per cent respectively [9].

Taking into account the relative numbers of men and women in employment, these figures suggest that the extent of sick leave attributable to mental health problems is likely to be higher in proportionate terms by around 24 per cent in Northern Ireland.

Finally, it should be noted that the estimate of £125 million also makes allowance for the fact that average earnings are somewhat lower in Northern Ireland than in England. This reduces the economic cost of sickness absence.
B2. Non-employment

This category of costs covers both unemployment (people with mental health problems looking for work but unable to find it) and economic inactivity (people not looking for work and who have therefore dropped out of the active labour force because of mental illness).

Economic inactivity is particularly important. For example, there are around 2.8 million people on Incapacity Benefits in the UK, of whom 35 per cent – 1 million people – cite mental ill-health as the main reason for their claim [10].

It is estimated that in England the above-average rate of non-employment among people with mental health problems is equivalent to around 400,000 person-years of lost employment. This loss of potential employment and hence output is valued at £9.4 billion in 2002/03 prices.

The corresponding cost for Northern Ireland is estimated at £350 million, based on the total for England and taking into account the relative size of the working-age population, the higher prevalence of psychiatric morbidity in this group and the level of average earnings.

B3. Unpaid work

Mental illness reduces the capacity of those affected to carry out not only paid work but unpaid work as well, for example housework. As noted above with reference to informal care, work of this kind is not included in national income as conventionally defined but is nevertheless of economic benefit and any loss of such output because of mental ill-health should be counted as a cost.

It is very roughly estimated for England that losses of unpaid work attributable to mental health problems carried a cost of £8.0 billion in 2002/03. This is based on the ONS accounts for unpaid household activity and also incorporates the assumption that the amount of time lost as a result of mental illness is the same in proportionate terms for unpaid work as for paid work.

Applying a similar calculation to Northern Ireland and allowing as before for relative population size, prevalence rates for mental health problems and income levels, it is estimated that the relevant cost in Northern Ireland in 2002/03 is £282 million.

B4. Premature mortality

Finally in this section, allowance needs to be made for the costs of output lost as a result of premature mortality that can be ascribed to mental illness. There were 162 suicides in Northern Ireland in 2002 [11] and in line with previous studies it is assumed that 90 per cent of these deaths were associated with mental illness, particularly depression. The consequent loss of output is valued at £52 million, taking into account the overall reduction in expected years of working life and average earnings in Northern Ireland [12].
C. The human costs of mental illness

As just described, mental illness reduces the capacity of individuals to work and it is clear that this negative impact on the output of the economy is a genuine cost. On the other hand, in assessing the overall impact of mental illness, it is also clear that this “human capital” approach tells only part of the story.

On any sensible reckoning, the most important costs of mental illness are the intangible ones of suffering, pain, disability and distress.

The approach taken in this study is an attempt to estimate a monetary value for the reductions to quality of life caused by mental illness.

To the extent that any such approach is regarded as novel or contentious, the approach described below should be seen as experimental and justified on the grounds that it is better to be roughly right than precisely wrong. It is clearly wrong to ascribe a zero value to the human costs of mental illness.

More refined estimates will depend on developments both in methodology and data availability.

Broad estimates of the human costs of mental illness are shown in Figure 4 below.
C1. Household population

A detailed account of the methodology used for quantifying and valuing human costs is given in the Sainsbury Centre paper on the economic and social costs of mental illness in England referred to in the Introduction. In brief, two main steps are involved:

- using survey evidence on a general measure of health status (the Quality-Adjusted Life-Year or QALY) to quantify the adverse effects of mental illness on the quality of life in the population each year. This results in an estimate of the total number of QALYs lost annually as a result of mental health problems; and
- deriving an estimate of the monetary value of a QALY and using this to convert the estimated number of QALYs lost each year to a monetary equivalent.

The main problem in applying this approach to Northern Ireland is the absence of survey evidence using the QALY measure of health status.

However, evidence is available for other general measures, including – as noted earlier – the GHQ12 instrument, which can be used to draw direct comparisons between Northern Ireland and England in terms of the overall prevalence of psychological morbidity.

As already seen, prevalence is found to be higher in Northern Ireland, particularly among women. To calculate the number of QALYs lost in Northern Ireland as a result of mental illness, the approach used here has therefore been to take the England figures for QALYs lost per '000 population (separately for men and women) and then to adjust these upwards to allow for the higher prevalence of mental health problems in Northern Ireland as indicated by the comparative GHQ12 results.

As a result of this calculation, it is estimated that around 45,000 QALYs are lost annually in Northern Ireland among adults living in private households because of mental health problems.

The remaining step is to convert this number to a monetary equivalent and for this purpose the value of a QALY is taken to be of the order of £30,000.

Again the derivation of this number is explained in detail in the Sainsbury Centre paper on the costs of mental illness in England, where among other things it is noted that a figure of around £30,000 per QALY appears to be being used to guide health technology and related appraisals in the NHS.

Given the general principle that resources are made available to fund broadly equivalent standards of NHS care in all parts of the UK, it seems appropriate on equity grounds to take the same value for a QALY in Northern Ireland as in England.

The end-result of these calculations is an estimate of £1352 million for the human cost of mental health problems among all adults living in private households.

A similar computation for children, based on some limited evidence that the prevalence of mental health problems among children is about half the adult rate, yields a further cost of £192 million.

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...A similar computation for children, based on some limited evidence that the prevalence of mental health problems among children is about half the adult rate, yields a further cost of £192 million.”

C.2. Institutional population

The above estimates are based on data from household surveys and so do not include those members of the population living in institutions. The main additional groups to be covered are people who are in institutions specifically because of mental illness, i.e. patients in psychiatric hospitals and residents of homes for the mentally ill, and also people in prisons, where the incidence of mental health problems is believed to be particularly high. Costs are based on numbers of individuals in the relevant sub-groups, together with QALY-related information that is available for matching sub-groups in England [13].

C.3. Premature mortality

The human costs of mental illness as calculated above are those associated with morbidity or reduced quality of life, but allowance should also be made for the human costs of the premature mortality that results from suicides attributable to mental ill-health. The cost estimate of £121 million given in Figure 4 is based on numbers of suicides as set out in section B.4 above and a cost per case which – again for equity reasons – is the same as used in the Sainsbury Centre study of the costs of mental illness in England [14].
4.1. Mental illness is costly in economic and social terms. This is demonstrated by the estimated figure of £2852 million for the total costs of mental illness:

<table>
<thead>
<tr>
<th>COST ELEMENTS</th>
<th>MILLION</th>
</tr>
</thead>
<tbody>
<tr>
<td>a] The costs of care</td>
<td>£372</td>
</tr>
<tr>
<td>b] Output losses</td>
<td>£789</td>
</tr>
<tr>
<td>c] human costs</td>
<td>£1691</td>
</tr>
<tr>
<td>Total estimated costs of mental illness in Northern Ireland</td>
<td>£2852 million</td>
</tr>
</tbody>
</table>

4.2. The economic and social costs of mental illness in Northern Ireland are more than the total spend on all health and social care for all health conditions.

4.3. The findings in this paper on the economic and social costs of mental illness can be used as a catalyst for debating public policy on mental health.

4.4. The benefits of reducing the prevalence and severity of mental health problems are very substantial when highlighted in financial terms.

4.5. Mental illness is one of the largest single health problems in our society.

4.6. Northern Ireland has a higher overall prevalence of mental health problems of a magnitude estimated at 25% higher than England [9].

4.7. Comparative studies have indicated that there is a lower spend on mental health services in Northern Ireland than in England [15]. To be on parity with England the amount spent would need to be increased by some £60.2 million, an increase of 26.3 per cent.
“...Northern Ireland has a higher overall prevalence of mental health problems of a magnitude estimated at 25% higher than England...”

4.8. Northern Ireland has a unique and extensive range of problems. There is a high level of socio-economic deprivation [19, 20] exacerbated in some geographical areas by the prolonged effect of civil disturbance and The Troubles [15-18].

4.9. A multi-sectoral, multi-layered approach to mental health promotion, prevention and early intervention is necessary if we are to secure an effective mental health promotion strategy for all the people of Northern Ireland.

4.10. Good mental health is everybody’s business. Good mental health involves all sections of society and all those agencies and organisations that have responsibility for:
- Business and employment
- Education
- Housing
- Leisure
- Spirituality
- Socio-economic deprivation

4.11. While the engagement of all relevant agencies for the promotion of mental health is essential it is important to underline that mental health is also fundamentally a question of citizenship, human rights and social justice.

2. Figures for expenditure on hospital, community health and personal social services supplied by the DHSSPSNI Strategic Financial Analysis Unit. The figure for GP consultations is an estimate based on the assumption used in the Sainsbury Centre study for England that 25 per cent of all consultations are for people with a mental health problem. The total number of GP consultations in Northern Ireland in 2002/03 was 6.81 million (The Continuous Household Survey (CHS) The Central Survey Unit of the Northern Ireland Statistics and Research Agency (NISRA)) and the average cost of a consultation is assumed to be the same as in England at £20, as given in Netten, A. and Curtis, L (2004), Unit Costs of Health and Social Care 2003, Personal Social Services Research Unit. The figure for drug prescriptions is (Central Services Agency, Prescription costs analysis, NI 2003).

3. Northern Ireland Department of Finance and Personnel (2002), The Executive Budget – Public Expenditure Plans 2003/04 to 2005/06, available on the Department’s website www.dfpni.gov.uk. The total of £2449.6 million breaks down as follows: hospital and community health services £1575.4 million; personal social services £547.8 million and family health services £326.4 million.


5. Full details can be found on the ONS website www.statistics.gov.uk/hhsa.

6. Data on average gross weekly pay by country and region within the UK are given in Regional Economic Indicators; a statistical article published quarterly in the ONS publication Economic Trends.

7. The 2001 Census results indicate that there are 5.2 million carers in England and Wales out of a total population of 52.5 million people (see ONS note on carers available at http://www.statistics.gov.uk/cci/nugget.asp?id=347). If this ratio applied in Northern Ireland, the number of carers would be 168,000. The actual number is 185,000, a difference of 10.1 per cent.


12. The value of lost output per case of premature mortality is based on the corresponding value for England used in the Sainsbury Centre study (see note 1 above) adjusted for the lower level of average earnings in Northern Ireland (see note 6 above).

13. Numbers of inpatients in mental illness hospitals (excluding patients on home leave) for 2002/03 were 1358, while the numbers of mentally ill people in residential and nursing home care were 813 (figures supplied by the DHSSPS Strategic Financial Analysis Unit). Numbers in prison were 1026 (see Northern Ireland Office (2003), The Northern Ireland Prison Population in 2002, Research and Statistical Bulletin 3/2003). The QALY-related information for matching sub-groups in England is described in the Sainsbury Centre paper listed in note 1.

14. The cost per case used in the Sainsbury Centre paper is £0.82 million in 2002/03 prices and is derived from a range of evidence on people’s willingness to pay for reductions in the risk of death, as collected by the Department of Transport in England for the purpose of valuing prevented fatalities in the appraisal of transport safety. Details are given in Department of Transport (2001), Highways Economics Note No.1. On average, the numbers of years of life lost because of a fatal road accident and a suicide are very similar.


18. DHSS Social Services Inspectorate, ‘Living with the Trauma of the Troubles’ (1998).
