

# **ANNEXES TO ‘HAPPINESS’**

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**(As of 1 February 2005)**

These annexes contain a variety of supporting technical analyses. Some are mainly statistical tables, some give detailed research evidence, and some are speculative analyses. References to works cited in these annexes can be found in the book. The annexes may be updated over time, so if you quote them please quote the date also.

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## **Annex 3.1**

### **Trends in happiness**

#### **Europe**

For Europe we have regular data from Eurobarometer since 1975. “Life satisfaction” questions have been asked in most years, and “happiness” questions in a number of years up to 1986. The happiness question is “Taking all things together, how would you say things are these days – would you say you’re very happy, fairly happy, or not too happy these days?” The life-satisfaction question is “On the whole, are you very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the life you lead?”

We treat each variable as a continuous variable scored 1-3 or 1-4 respectively. We then take the individual data and regress them on time ( $t$  – statistics in brackets). Reading from left to right, Table 3.1A starts with the period 1975-86 and shows that in most countries, but not all, happiness grew more than life satisfaction. Then we take life satisfaction over the longer period, showing first the annual change and then the cumulative change over 25 years.

To think about these numbers, we show in the last column the standard deviation of life-satisfaction in one year across individuals. Thus in France average life-satisfaction rises by 10% of a standard deviation. If such an increase occurred for someone with middling life-satisfaction while everyone else stood still, this would raise his rank in the distribution of life satisfaction by 4 percentage points.

The conclusion of the table is that in most countries:

- (a) before 1986 happiness rose.
- (b) before 1986 happiness rose more than life-satisfaction.
- (c) since 1986 life-satisfaction rose more than it rose before 1986.
- (d) from (b) and (c) happiness probably rose more since 1986 than before 1986, and from (a) it therefore rose over the whole period since 1975.

#### **USA**

For the US we have the General Social Survey which asked the following question about happiness in most years since 1972: “Taken all together, how would you say things are these days. Would you say that you are very happy, pretty happy, or not too happy?” At the bottom of Table 3.1A we show the regression of these replies on time. They show a slight fall in happiness.



**Table 3.1B**  
**Trends in Eastern Europe and the developing world**

	Average Happiness				Average Life Satisfaction			
	1981	1990	1995-97	1999-2000	1981	1990	1995-97	1999-2000
Hungary	2.86	2.72		2.84	6.93	6.03		5.80
Poland		2.97	3.02	2.85		6.64	6.42	6.20
Czech Republic		2.76		2.95		6.37		7.06
Slovakia			2.51	2.74		6.15		6.03
Croatia			2.75	2.94			6.18	6.68
Macedonia			2.74	2.89			5.70	5.12
Bulgaria		2.33	2.58	2.44		5.03	4.66	5.50
Romania		2.63		2.39		5.88		5.23
Albania				2.59				5.17
Slovenia		2.62	2.85	2.91		6.29	6.46	7.23
Serbia			2.80	2.83			5.56	5.62
Montenegro			2.83	2.76			6.21	5.64
Bosnia			2.87	3.02			5.46	5.77
East Germany		2.96	2.91			6.72	6.64	
Estonia		2.58	2.64	2.71		6.00	5.00	5.93
Latvia		2.52	2.73	2.61		5.70	4.90	5.27
Lithuania		2.53	2.56	2.79		6.01	4.99	5.20
Tambov (Russia)	2.71		2.41		7.13		4.23	
Russia		2.54	2.50	2.43		5.37	4.45	4.65
Ukraine			2.45	2.43			3.95	4.56
Belarus		2.46	2.42	2.69		5.52	4.35	4.81
Moldova			2.40	2.53			3.73	4.56
Georgia			2.69	2.72			4.65	4.68
Armenia			2.55	2.55			4.32	4.32
Azerbaijan			2.88	2.88			5.39	5.39
Argentina	2.94	3.07	3.10	3.12	6.77	7.25	6.93	7.30
Bangladesh			3.01	2.90			6.41	5.77
Brazil		2.95	3.03			7.37	7.15	
Chile		3.03	3.07	3.16		7.55	6.92	7.12
China		2.95	3.05	2.87		7.29	6.83	6.53
India		2.93	3.04	2.95		6.70	6.53	5.14
Mexico	3.14	2.95	3.00	3.49	7.96	7.41	7.69	8.14
Nigeria		2.98	3.23	3.58		6.59	6.82	6.87
Pakistan			3.03	2.94				
Peru			2.91	2.95			6.36	6.44
Philippines			3.32	3.27			6.84	6.65
Puerto Rico			3.33	3.47			8.10	8.49
South Africa	3.05	2.97	3.16	3.22	6.79	6.72	6.08	6.31
South Korea		2.86	3.00	2.96	5.33	6.69		6.21
Taiwan			3.14	3.19			6.89	6.56
Turkey		3.08	3.37	2.91		6.41	6.18	5.62
Venezuela			3.48	3.42			6.72	7.52

## Cross-section in later years

Finally, it is interesting to give basic data on happiness and life-satisfaction for the World Values Survey in the latest available year. This is given in Table 3.1C. Countries are listed in order of the average of % happy plus % satisfied (as in the chart in Chapter 3 of the book).

**Table 3.1C**  
**All available countries: latest year**

Country	Average of % Happy + % Satisfied	% Happy	% Satisfied	Mean Happiness	Mean Life Satisfaction	Year
Netherlands	95.0	95.1	94.9	3.4	7.8	1999
Iceland	94.7	97.3	92.0	3.4	8.1	1999
Ireland	94.2	96.3	92.1	3.4	8.2	1999
N.Ireland	93.1	95.4	90.7	3.4	8.0	1999
Denmark	92.4	94.7	90.2	3.4	8.2	1999
Puerto Rico	92.3	94.3	90.4	3.5	8.5	2001
Switzerland	92.1	95.1	89.1	3.3	8.0	1996
Canada	91.9	95.9	88.0	3.4	7.8	2000
Luxembourg	91.1	94.3	87.8	3.3	7.8	1999
USA	90.6	94.0	87.1	3.3	7.7	2000
Malta	90.3	86.7	93.8	3.2	8.2	1999
Norway	90.1	94.5	85.8	3.2	7.7	1996
Finland	90.1	90.4	89.8	3.1	7.9	2000
Sweden	89.9	93.7	86.1	3.3	7.6	1999
New Zealand	89.8	95.1	84.5	3.3	7.7	1998
Austria	89.5	90.1	88.9	3.3	8.0	1999
Australia	89.5	94.4	84.5	3.4	7.6	1995
Singapore	89.1	95.2	82.9	3.3	7.2	2002
Mexico	88.6	92.4	84.7	3.5	8.1	2000
Britain	87.7	90.4	85.1	3.2	7.5	1998
Belgium	87.6	92.0	83.2	3.3	7.4	1999
Colombia	87.1	84.3	89.9	3.3	8.3	1997
Indonesia	87.0	95.0	79.0	3.2	7.0	2001
El Salvador	86.0	92.2	79.9	3.5	7.5	1999
France	85.0	91.9	78.0	3.2	7.0	1999
Nigeria	83.5	91.8	75.1	3.6	6.9	2000
Spain	83.4	87.6	79.1	3.1	7.0	1999
Chile	83.2	90.3	76.0	3.2	7.1	2000
Germany	82.5	81.0	84.1	3.0	7.4	1999
Venezuela	82.4	86.3	78.5	3.4	7.5	2000
Czech Republic	81.9	85.5	78.3	2.9	7.1	1999
Portugal	81.7	84.1	79.2	3.0	7.0	1999
Taiwan	81.3	91.1	71.5	3.2	6.6	1994
Italy	80.8	80.2	81.4	3.0	7.2	1999

Japan	80.4	89.2	71.7	3.2	6.5	2000
Argentina	80.2	81.7	78.7	3.1	7.3	1999
Vietnam	78.3	92.4	64.1	3.4	6.5	2001
Uruguay	77.9	81.0	74.7	3.0	7.1	1996
Philippines	77.4	88.2	66.6	3.3	6.7	2001
Brazil	77.2	82.9	71.5	3.0	7.2	1997
Israel	77.1	78.5	75.6	3.0	7.0	2001
Slovenia	77.0	78.0	76.0	2.9	7.2	1999
Croatia	75.7	82.2	69.3	2.9	6.7	1999
South Korea	74.8	87.7	61.9	3.0	6.2	2001
Hungary	74.6	72.5	76.7	2.8	5.8	1999
Greece	74.5	75.9	73.1	2.9	6.7	1999
Dominican R.	74.3	73.7	74.9	3.1	7.1	1996
China	72.9	78.1	67.6	2.9	6.5	
South Africa	71.1	82.0	60.1	3.2	6.3	2001
Egypt	69.9	89.6	50.2	3.1	5.4	2000
Algeria	68.9	83.7	54.2	3.0	5.7	2002
Bosnia	66.9	82.5	51.3	3.0	5.8	2001
Poland	66.3	74.5	58.1	2.9	6.2	1999
Morocco	65.5	81.7	49.3	3.0	6.1	2001
Peru	64.6	66.2	62.9	3.0	6.4	2001
Slovakia	64.5	70.6	58.4	2.7	6.0	1999
Jordan	63.4	83.4	43.4	2.9	5.6	2001
Uganda	63.2	77.7	48.6	3.0	5.7	2001
Iran	63.1	62.6	63.6	2.8	6.4	
Estonia	62.8	68.0	57.7	2.7	5.9	1999
Montenegro	62.1	69.3	54.9	2.8	5.6	2001
Serbia	61.9	74.9	48.8	2.8	5.6	2001
India	61.8	74.1	49.4	3.0	5.1	2001
Lithuania	61.5	77.3	45.7	2.8	5.2	1999
Turkey	60.6	71.9	49.3	2.9	5.6	2001
Bangladesh	59.7	77.5	41.9	2.9	5.8	2002
Azerbaijan	59.7	78.1	41.2	2.9	5.4	1996
Tanzania	59.2	94.5	23.8	3.5	3.9	2001
Macedonia	57.5	74.9	40.0	2.9	5.1	2001
Pakistan	52.3	76.6	28.0	2.9	4.9	2001
Belarus	51.0	68.6	33.4	2.7	4.8	2000
Latvia	51.0	58.0	44.0	2.6	5.3	1999
Albania	50.2	59.2	41.3	2.6	5.2	2002
Georgia	50.2	65.5	34.8	2.7	4.7	1996
Bulgaria	48.9	47.2	50.6	2.4	5.5	1999
Romania	47.2	47.3	47.2	2.4	5.2	1999
Armenia	42.7	56.8	28.7	2.6	4.3	1997
Zimbabwe	41.4	56.5	26.3	2.7	3.9	2001
Moldova	40.7	50.5	31.0	2.5	4.6	
Russia	40.7	47.8	33.6	2.4	4.7	1999
Ukraine	39.3	47.3	31.4	2.4	4.6	1999

## Annex 4.1

### Role of income comparisons and habituation

In this Annex we review the evidence that happiness is affected not only by own income but by societal income (negatively) and by own lagged income (negatively). We begin with two studies which bring in both these factors at the same time. We then look at three studies which look at income comparisons only, and then at two which look at habituation only.

#### 1. The US General Social Survey (Niall Flynn<sup>1</sup>)

This shows the importance of societal income and own lagged income. It also confirms that

- (a) perceived relative income is more important than actual income as a determinant of happiness and
- (b) a fall in income hurts about twice as much as an equal rise helps.

#### Data

The data are for 34,000 individuals sampled once each over the years 1972-98. The variables are

H	happiness (very happy = 3, pretty happy = 2, not too happy = 1)
Y	log of real household income per adult (2 adults = 1.6; 3 adults = 2.1)
$\bar{Y}$	log of average household income per adult in the same year and household type
R	perceived relative income (well above average = 5, above average = 4, average = 3, below average = 2, well below average = 1) <sup>2</sup>
$\Delta Y > 0$	dummy (compared with no change)
$\Delta Y < 0$	dummy (compared with no change)
X	age, age <sup>2</sup> , sex, marital and employment status

#### Results

The first equation below regresses happiness on actual income, as well as on perceived relative income, average income and income change. The second equation

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<sup>1</sup> Centre for Economic Performance, LSE.

<sup>2</sup> This variable is symmetrically distributed around 'average' – there is no bias in people's self-assessment.

explains perceived income by actual income and societal income and income change. The equations were also run with time trends (or time dummies) and the results were very similar. The following results show t- statistics in brackets, adjusted for clustering.

$$H = .04 Y - .05 \bar{Y} + .06 R + .10 (\Delta Y > 0) - .17 (\Delta Y < 0) + \hat{a}X \quad (r^2 = .11) \quad (1)$$

(8)            (3)            (14)            (14)            (19)

$$R = .45 Y - .29 \bar{Y} + .19 (\Delta Y > 0) - .26 (\Delta Y < 0) + \hat{b}X \quad (r^2 = .30) \quad (2)$$

(44)            (18)            (25)            (23)

Combining (1) and (2), we have the ‘reduced form’

$$H = .07 Y - .06 \bar{Y} + .11 (\text{Dummy for } \Delta Y > 0) - .19 (\text{Dummy for } \Delta Y < 0) + \hat{c}X$$

To see the importance of any variable in explaining the variation in happiness, we multiply the coefficient in the equation by the standard deviation of the variable.

These standard deviations are

H	Y	$\bar{Y}$	R	$\Delta Y > 0$	$\Delta Y < 0$
.63	.85	.30	.83	.49	.41

This indicates the large role of differences in perceived income and differences in income growth in explaining the variation of happiness. As the reduced form equation shows, a low value of lagged income raises happiness, by making it more likely that  $\Delta Y > 0$  and less likely that  $\Delta Y < 0$ .

The US General Social Survey also asks about financial satisfaction (FS). The question is “Would you say you are pretty well satisfied with your present financial situation, more or less satisfied, or not satisfied at all?” If this dependent variable is used as a 1-3 dependent variable, equation (1) becomes

$$FS = .11 Y - .12 \bar{Y} + .21 R + .22 (\Delta Y > 0) - .40 (\Delta Y < 0) + \hat{d}X \quad (r^2 = .31) \quad (1)'$$

(19)            (8)            (33)            (24)            (36)

Combining (1)' and (2), we have the reduced form

$$FS = .21 Y - .18 \bar{Y} + .26 (\Delta Y > 0) - .45 (\Delta Y < 0) + \hat{e}X$$

The standard deviation of FS is .74

This shows that perceived relative income is especially important in determining financial satisfaction. It also shows how average income and own lagged income both



reduce financial satisfaction. Falls in income again hurt twice as much as rises in income help.

For reference, the correlation coefficients are as follows:

H and $Y/\bar{Y}$	.17	FS and $Y/\bar{Y}$	.29
H and R	.19	FS and R	.39
H and FS	.29	R and $Y/\bar{Y}$	.52

## 2. The Swiss Poverty Study (Stutzer, 2003)

This study also shows the importance of societal income and of habituation. The argument is in two stages. First, happiness depends (negatively) on income aspirations. Second, income aspirations depend on societal income and own (lagged) income.

### Data

The study uses a representative sample of 6,000 Swiss adults covered in the Swiss Poverty Study collected in 1992-4. The variables are

H	life-satisfaction (1-10)
Y	log household income
A	log of income aspirations <sup>3</sup>
$\bar{Y}$	log average income in community (490 communities)
X	age, age <sup>2</sup> , sex, education, health, employment status, household size and composition

### Results

The first equation shows happiness as a function of income and income-aspirations. The second shows income-aspirations as a function of own income, average income and own lagged income. The findings in Stutzer's Tables 2, 3B and 4 give the following (the numbers in brackets are t- statistics):

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<sup>3</sup> The question is "What income per month for your entire household do you consider to be sufficient?"

$$H = \underset{(5)}{.43} Y - \underset{(4)}{.38} A + \hat{a}X \quad (r^2 = .11) \quad (3)$$

$$A = \underset{(26)}{.40} Y + \underset{(6)}{.19} \bar{Y} - \underset{(2)}{.04} (\Delta Y > 0) + \underset{(5)}{.09} (\Delta Y < 0) + \hat{b} X \quad (r^2 = .57) \quad (4)$$

Though Y here is current income, Stutzer also finds from a 2-period panel study (using the Swiss Household Panel) that the elasticity of A with respect to the **previous** year's income is around .45.

Combining (3) and (4), we have the 'reduced form'

$$H = .28Y - .07\bar{Y} + .015 (\text{Dummy for } \Delta Y > 0) - .030 (\text{Dummy for } \Delta Y < 0)$$

The standard deviations of the variables are<sup>4</sup>

H	Y	$\bar{Y}$	A
1.69	.60	.18	.43

This analysis shows the huge role of income aspirations. It also shows how community income and own lagged income both reduce happiness. Again falls in income hurt twice as much as rises in income help.

If equation (3) is estimated without A but with  $\bar{Y}$ , the result is

$$H = \underset{(4.5)}{.29} Y - \underset{(2.0)}{.33} \bar{Y} + \hat{a}X \quad (3)'$$

Compared with the reduced form, this gives a more powerful role to social comparisons, working through many channels besides A (which is itself measured with error).

In this analysis all equations are estimated from cross-sectional data. By contrast, Frey and Stutzer (2003) use the German Socio-Economic Panel for 1992 and 1997 to estimate equation (3) with a fixed effect. The coefficients on actual income and income aspirations are again equal in size with opposite sign.

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<sup>4</sup> Private information from Alois Stutzer.

### 3. The US General Social Survey (Blanchflower and Oswald, 2004)

This is a pseudo-panel study which shows the (negative) effect of average income in each US state on the happiness of people in that state.

#### Data

The data are for 32,751 individuals sampled once during the years 1972-98. The variables are

H happiness (usual 3 answers)  
Y log income per person in household  
R income per person in household divided by state income per head  
T time

The analysis is by ordered logit, using state dummies and 19 personal controls.

#### Results

The estimated logit equation is (Table 8, Col 4)

$$H = .17 Y + .08 R - .01 T + \hat{a} X$$

(7.8)      (2.9)      (5.6)

This gives, where  $y$  is absolute income and  $\bar{y}$  state average income,

$$\frac{\partial H}{\partial y} = .17 \frac{1}{y} + .08 \frac{1}{\bar{y}}$$

and

$$\frac{\partial H}{\partial \bar{y}} = -.08 \frac{y}{\bar{y}^2}$$

Thus, for households where  $y = \bar{y}$ , the negative effect of statewide income ( $\partial H / \partial \bar{y}$ ) is about 30% of the positive effect of own income.

#### 4. The US National Survey of Families and Households (Luttmer, 2004<sup>5</sup>)

This study is probably the most careful study of the effect of local incomes upon individual happiness. It makes two special contributions:

1. It confirms that the effect of neighbours' incomes is not simply an effect of local **price** differences.
2. It confirms that the reported differences in happiness are not in fact just differences in **relative** happiness (relative to neighbours' happiness).

#### Data

About 10,000 married or cohabiting adults, studied once in 1987-8 and once in 1992-4. The variables are

H	happiness (1-7)
Y	log household income
$\bar{Y}$	log of average local earnings (computed on localities of about 100,000 people). Local earnings are computed by taking the local industryX occupation mix in 1990 and applying to it the national industryX occupation earnings levels in each year. (This thus excludes local price-level effects.)
X	race, household size, age, religion.

#### Results

The first equation below uses no individual fixed effect but instruments own income. It finds that neighbours' earnings hurt happiness almost as much as own income increases it.

$$H = .37Y - .28\bar{Y} + \hat{a}X$$

(4)                      (4)

The second equation introduces a fixed effect and confirms the importance of neighbours' earnings.

$$H = .05Y - .23\bar{Y} + \hat{b}X$$

(1.0)                      (1.8)

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<sup>5</sup> E. Luttmer (2004), 'Neighbours as negatives: relative earnings and well-being', NBER Working Paper 10667.

To examine the validity of the dependent variable, the study also uses as dependent variable a question about financial worries (FS) – a clearly absolute concept. The question is: “How often do you worry that your total family income will not be enough to meet your family’s expenses and bills?” Answers vary from 1 (never) to 5 (almost all the time). Using this as dependent variable, the result is

$$FS = .39Y - .22\bar{Y} + \hat{c}X$$

(11)      (4)

The study also regresses happiness on the earnings of people in the same educational group as the respondent, and in different educational groups. The effect coming from the same educational group’s earnings is much the strongest. The study also shows that neighbours’ earnings matter more to people who socialise in their neighbourhood and less to people who socialise outside – a powerful piece of evidence.

Luttmer’s paper also contains useful references to further studies on social comparison effects.

## 5. The British Household Panel Survey (Clark and Oswald, 1996)

This study finds that job satisfaction depends negatively on the expected pay for a person like yourself, and positively (though less strongly) on your own income..

### Data

5,197 British employees in late 1991. The variables are

H	job satisfaction (1-7)
Y	log earnings
$\bar{Y}$	log earnings predicted from a typical earnings equation

### Results

Estimation by ordered probit gives the following results (their Table 3):

$$H = .11Y - .20\bar{Y} - .12 \log \text{Hours} + \hat{a}X$$

(2.2)      (3.1)      (2.3)

## 6. The Leydon School's Income Evaluation Studies (Van Praag and Frijters, 1999)

This study, repeated in many countries, asks people

“While keeping prices constant, what after-tax total monthly income would you consider for your family to be: Very bad; Bad; Insufficient; Sufficient; Good; Very good?”

From the six numbers supplied by a respondent a measure of his central tendency (A) is derived, which corresponds essentially to the income lying between Insufficient and Sufficient.

This is an ‘aspiration’ income. The study then shows how this aspiration income is affected by actual income. The elasticity of aspiration income with respect to actual income is around .4 (as in Stutzer, 2003).

### Data

Questionnaires administered in 9 countries. Variables are

- A log aspiration income
- Y log actual income
- X family composition, etc

### Results

When estimating

$$A = bY + \hat{a}X$$

values of b are

Britain	.36
Belgium	.43
Denmark	.63
France	.50
West Germany	.58
Ireland	.45
Italy	.38
Netherlands	.54
Russia	.50

## 7. The British Household Panel Survey (Clark, 1999)<sup>6</sup>

This shows that job-satisfaction depends on wage change.

### Data

4,430 employees, interviewed in 1991 and again in 1992 who had not changed jobs nor been promoted. The variables are

H job satisfaction (1-7)

Y log earnings

Y<sub>-1</sub> lagged log earnings

### Results

Estimation by ordered probit yields

$$H = \underset{(2.9)}{.49} Y - \underset{(1.5)}{.43} \log \text{Hours} - \underset{(2.7)}{.44} Y_{-1} + \underset{(1.8)}{.52} \log \text{Hours}_{-1} + \hat{\alpha}X$$

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<sup>6</sup> A. Clark (1999), 'Are wages habit-forming? Evidence from micro data', Journal of Economic Behaviour and Organisation, 39, 179-200.

## Annex 4.2

### Productivity and growth in Europe and the USA

The first table compares the level of productivity per hour in the US and France, and shows how this relates to income per head.

**Table 4.2A**  
**Levels: France and the US compared, 1999 (France = 100)**

	France	US
1. GDP per hour worked	100	102
2. Hours worked per employee	100	118
3. Employees per head of population	100	115
4. GDP per head of population (= 1 x 2 x 3)	100	138

Source: O'Mahony and de Boer "Britain's relative productivity performance: has anything changed?", National Institute Economic Review, No.179, January 2002, Table 1 and OECD Labour Force Statistics 1981-2001.

The next table compares the US and EU growth rates of, first, labour productivity per hour, then GDP per capita, and then GDP.

**Table 4.2B**  
**Growth rates: European Union and the US compared (% p.a.)**

	EU (15)	US
Productivity per hour (1990-2000)	1.9	1.6
GDP per head (1980-2001)	1.9	2.0
Population (1980-2001)	0.3	1.1
GDP (1980-2001)	2.2	3.1

Source: M. O'Mahony, OECD Historical Statistics, OECD Economic Outlook.



### Annex 4.3

#### Is happiness cardinal and comparable?

We can only discuss public policy in terms of its impact on happiness if changes in happiness can be measured unambiguously.<sup>1</sup> **For one individual**, we must be able to compare the change of happiness when he goes from A to B with that when he goes from C to D and so on. If on one scale the difference from A to B is 1 unit and that from C to D is 2 units, then we can also use any other scale which ensures that the difference between A and B is one half the difference between C and D and so on. This means that if we originally measured happiness by a variable X, we can alternatively measure it by any other variable Y which satisfies

$$Y = a + b X$$

where b is any positive number and a is any number, positive or negative. Economists call such measurement a “cardinal” scale; psychologists call it an “interval” scale.

We must also of course be able to compare the happiness of **different people** while using a common scale. We must certainly be able to compare their changes in happiness. And for at least two purposes we need to be able to compare their levels of happiness. The first is if in public policy analysis we want to know who is less happy and who is more happy, in order to give more weight to changes in happiness accruing to people who are less happy. The second is for purposes of research, when cross-sectional analysis across people would only yield information if individuals reported their happiness in a way which was comparable in levels as well as in terms of intervals along the scale.

#### Evidence

There is prime facie evidence that when individuals report their happiness they use measurements which are both comparable across individuals and embody a cardinal scale of measurement. Consider for example Helliwell (2003a, Table 5) which is based on the World Values Survey. Respondents in many countries have answered questions about life satisfaction (1-10) and its possible determinants (X). Helliwell then estimates by ordered probit a function  $(aX_i + e)$  which best predicts the category of response each person gives on life satisfaction. The function  $\hat{a}X$  has a considerable ability to place each individual in the right category along the scale, in spite of the fact that many obvious determinants of happiness could not be included. And if we treat the responses as a single continuous variable, the coefficients  $\hat{a}$  are in almost identical ratios to those produced by the ordered probit. (For OLS the  $R^2$  was .26.)

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<sup>1</sup> See A.K. Sen, *Collective Choice and Social Welfare*, 1970.

Two conclusions follow. First there must be a fairly common understanding across people of what the categories on the scale mean. This implies an important element of comparability.

Second, they understand the categories as points on a cardinal variable. One could of course assert that each individual uses not his true cardinal scale but some non-linear transformation of it (i.e. an ordinal scale). But this could only be true if every individual happens to have used the same transformation – which is most unlikely. So it is reasonable to assume that individual reports are based on a common cardinal scale.

For those who doubt this, we can turn to other studies in which the dependent variable is not expressed in numerical form but in the form “Very happy; fairly happy; not very happy etc”. Such replies can also be explained quite well by ordered logit. With happiness it is more obvious that the respondent is attempting to reply about the intensity of his feelings. (Indeed the way in which we interact with each other implies that this is what we are talking about.) Not surprisingly we can explain people’s replies to these questions quite well by a linear function  $\hat{X}$ , and the weights in  $\hat{X}$  are in similar ratio to those explaining life satisfaction (1-10). Moreover the replies on happiness (which embody intensity) are quite good predictors of life satisfaction – suggesting that the life satisfaction measure also reflects intensity of feeling. Thus we can safely assume that there is an objective intensity of happiness, which can meaningfully be measured on a cardinal scale.

### **Cardinality and expected utility**

Further evidence in favour of cardinality comes from the success of the expected utility approach to uncertainty.<sup>2</sup> According to this theory an individual faced with different “alternatives” evaluates them according to the value of  $\sum_{i=1}^n \Pi_i u_i$  where there are  $n$  possible outcomes of the “alternative” chosen,  $\Pi_i$  is the probability of each outcome and  $u_i$  is the cardinal utility of the outcome if it arose. This approach has had considerable empirical success, which supports the validity of the cardinality assumption.

One could of course argue that this tells us nothing about the utility associated with a certain outcome *ex ante*. For choice is based simply on the ordering of the expressions  $\sum \Pi_i u_i$  and if one outcome only is certain we return to the ordering of  $u_i$ . But this specious argument can be cut down by Ockham’s razor. The original idea of expected utility was based on psychological insights about the diminishing marginal

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<sup>2</sup> K.H. Borch, *The Economics of Uncertainty*, 1968, chapter 6.

utility of income. To add a **further** mathematical transformation (so that people behave as if they were maximising some monotonically increasing function of expected utility) is a retreat from reality.

### A ratio scale

So long as the time period over which life is experienced is fixed, a cardinal scale is sufficient for handling problems of optimal policy. However if extinction is one of the possible outcomes within the period being considered, then we have to set a value on being dead. The natural value is zero, in which case we can no longer choose the constant term in the utility function at will. Some experiences have to be deemed positive and others negative, and the only transformation which can be made without altering the ranking of policy options is multiplication by a scalar factor. We then have a “ratio scale”.

Such a scale can now be used to compare the total utility of experiences of different duration. For example suppose one experience is a healthy life yielding 1 util per period and lasting  $n$  years, and another experience is an unhealthy life lasting  $m$  years, with  $m$  more than  $n$ . If we knew that a person valued the shorter healthy life as much as the longer unhealthy life, we would know that the util per period of an unhealthy life ( $u$ ) is given by

$$mu = n(1)$$

Thus

$$u = \frac{n}{m}$$

We can express the utility of any state relative to a healthy state (chosen as numeraire) as the ratio of time spent in the two states that gives the same overall satisfaction. This is the so-called method of “time trade-off”.

This method assumes that the reason for the different durations is different lengths of life. Except for being dead, there is no other experience to which the value of zero could be attached, except by chance. However, as a hypothetical exercise, time trade-off can be used to generate utility measures (based on a ratio scale) for any two states which the enquirer wishes to compare – provided one can trust the answers to such questions and confirm that the value of non-existence is zero.<sup>3</sup>

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<sup>3</sup> For an early axiomatic derivation of the time trade-off method see Pliskin, J., Shepard, D. and Weinstein, M. (1980), ‘Utility functions for life years and health status’, *Operations Research*, 28, 1, 206-224. For further empirical discussion see Loomes, G. and McKenzie, L. (1989), ‘The use of QALYs in health care decision making’, *Social Science and Medicine*, 28, 4, 299-308. For a further derivation of the time trade-off approach see D. Kahneman, P. Wakker and R. Sarin, ‘Back to Bentham? Exploration of experienced utility’, *Quarterly Journal of Economics*, May 1997. This shows that, if you can rank sequences of experience in a way which is unaffected by adding to them some extra periods with zero utility, then momentary utility must correspond to a ratio scale. (This article is widely misinterpreted to endorse ordinal utility.)

## Annex 5.1 Heritability

The heritability of a trait is often calculated as twice the correlation of the trait across pairs of identical twins minus twice the correlation of the trait across pairs of non-identical twins. This would be correct if twins were representative of the population and the trait were determined by the additive effects of a number of genes. Thus the trait  $t$  could be determined by

$$t = \sum g_i + e$$

when  $g_i$  is the quantity of each genetic effect and  $e$  is the environmental effect. For identical twins  $\sum g_i$  is the same for both individuals, while for non-identical twins only half of  $\sum g_i$  is the same. Assuming for simplicity of exposition that  $\sum g_i$  and  $e$  are independent, then across pairs of **identical twins** the correlation ( $r$ ) of the trait in the first and second twin is

$$r^I = \frac{\text{Var } \sum g_i}{\text{Var } t}$$

Across pairs of **non-identical twins** that correlation is

$$r^N = \frac{\frac{1}{2} \text{Var } \sum g_i}{\text{Var } t}$$

So heritability, which is measured by  $\frac{\text{Var } \sum g_i}{\text{Var } t} = 2(r^I - r^N)$

An alternative measure of heritability is  $r^I$  itself, measured when the twins are reared apart and therefore share no common environment.

## Annex 5.2

### Domain satisfaction and overall happiness

We want to know how far satisfaction with different domains affects overall life satisfaction. For this purpose we include 5 domains (the 4<sup>th</sup> being an aggregate of “the city or place you live in” and “your friends”, with equal weights). The analysis is for 19,000 respondents over 18 years, using the US General Social Survey.

The following table shows  $\beta$  coefficients (or partial correlation coefficients) which show the effect of changing the explanatory variable by one standard deviation upon the level of the explained variable (in units of its standard deviation).

#### Individual data: determinants of life satisfaction

Satisfaction with	$\beta$ Coefficient	t-statistic
Family life	.187	27
Financial situation	.174	26
Job or housework	.154	23
Community and friends	.149	20
Health	.120	28
$R^2$	.24	

Note that most people are fairly healthy, so the  $\beta$  coefficient does not fully reflect the differences in life satisfaction when health goes from very good to very bad.

### Annex 5.3

#### Causes of national life-satisfaction and suicide rates

Helliwell (2003b) used the World Values Surveys (1981, 1990, 1995-7 and 1999-2000 rounds) to obtain the following results in his “overarching model”. Interestingly, if health-adjusted life expectancy is added to the first equation, its effect is small and insignificant. It does however reduce suicide.<sup>7</sup>

#### National data: determinants of life satisfaction and suicide

	β coefficients		
	Explaining average life satisfaction	Explaining absence of suicide	Explaining absence of traffic fatalities
Divorce rate	-.21	-.50	-.21
Unemployment rate	-.15	-.05	.14
Trust in other people	.25	.24	.39
Membership of vol. orgs.	.14	.17	.23
Quality of government	.67	.14	.11
Belief in God	.32	.48	.07
R <sup>2</sup>	.80	.57	.24
N	117	117	117

Source: The first two columns are from Helliwell (2003b), Table 5, Columns 3 and 4, with slightly updated data. The last column has been computed by Helliwell subsequent to that paper. Observations on 50 countries for up to 4 years (since 1981). In the first column all t statistics are above 2.8. In the second all are above 2.4 except government (1.7) and unemployment (0.6).

<sup>7</sup> Private information from John Helliwell.

## Annex 6.1

### Effect of TV on happiness

The following regressions use the US General Social Survey over the years 1975 to 1998, including some 22,000 observations. Niall Flynn has run two equations similar to those in Annex 4.1 Section 1. The first determines happiness and the second determines the perception of relative income. The variables are

H	happiness (very happy = 3, pretty happy = 2, not too happy = 1)
Y	real household income per adult (2 adults = 1.6; 3 adults = 2.1)
$\bar{Y}$	average household income per adult in the same year and household type
R	perceived relative income (well above average = 5, above average = 4, average = 3, below average = 2, well below average = 1)
T	TV hours per day
X	age, age <sup>2</sup> , sex, marital and employment status, time dummies
FS	financial satisfaction

The coefficients reported below are beta coefficients, with t-statistics in brackets.

$$H = .04Y - .03\bar{Y} - .07R + .07(\Delta Y > 0) - .12(\Delta Y < 0) - 0.7T + \hat{a}X \quad (1)$$

(4)
(3)
(9)
(16)
(16)
(10)

$$R = .45Y - .11\bar{Y} + .11(\Delta Y > 0) - .13(\Delta Y < 0) - .03T + \hat{b}X \quad (2)$$

(35)
(15)
(18)
(18)
(4)

We also estimated a financial satisfaction equation:

$$FS = .13Y - .04\bar{Y} + .23R + .15(\Delta Y > 0) - .23(\Delta Y < 0) - .03T + \hat{c}X \quad (3)$$

(15)
(6)
(25)
(18)
(31)
(7)

These equations show clearly that TV affects happiness partly through its effect on perceived relative income and partly directly (for example through the uncreative use of time).

## Annex 8.1

### How caring about others could make people happier

Suppose there are two people, A and B. A starts off with 1 unit of  $x$  and B with none. A then decides how much to give to B.

The satisfaction which each individual gets from his own  $x_i$  is  $\sqrt{x_i}$  and the satisfaction that he gets from the other person's  $x_j$  is  $\alpha\sqrt{x_j}$  (where  $j \neq i$ ).

Assume  $0 \leq \alpha \leq 1$ .

The total satisfaction of society is thus  $\sqrt{x_A} (1 + \alpha) + \sqrt{1 - x_A} (1 + \alpha)$

For a given  $\alpha$ , this is maximised at  $x_A = 1/2$ .

But if  $\alpha < 1$ , A chooses more for himself i.e. more  $x_A$  than this. He maximises

$\sqrt{x_A} + \alpha\sqrt{1 - x_A}$ . This leads to  $x_A = 1/(1 + \alpha^2)$  which decreases as  $\alpha$  increases. A's happiness is  $(1 + \alpha^2)^{1/2}$  which increases as  $\alpha$  increases. B's happiness is  $2\alpha/(1 + \alpha^2)^{1/2}$  which also increases as  $\alpha$  increases. Thus the more other-regarding our tastes, the happier we are.



## Annex 8.2

### The value of creating or extending life

Bentham believed that we should maximise the total happiness of those people who (for whatever reason) exist and will exist. He did not consider that the principle should be used to determine how many people should exist – how many should be born or how long they should be kept alive. He thought these matters should be left primarily to the choices of whoever happened to exist at each point in time.<sup>8</sup> I broadly agree with this.

However many people argue differently. They believe that society should maximise the **total** sum of happiness. In other words we should always increase the number of people so long as this does not reduce average happiness by a greater proportion. They apply this logic both to increases in the number of babies born and to increases in life expectancy.

#### A. Increasing births

Such a logic would almost certainly favour major increases in human population. For, given the human capacity of adaptation, it is most unlikely that a sustained increase in population would lead to a more than proportionate decrease in average happiness. Moreover the most cost-effective way of increasing population would in most cases be through extra births rather than longer life-expectancy. It can be quite expensive to increase life-expectancy, in richer countries at least, while births can be readily increased by banning abortion and contraception or by financial transfers.

Most or all of these conclusions would seem unacceptable, so we should therefore reject the premise. The objective of maximising “total happiness” cannot be sensible.

And indeed it is not. For our original argument in favour of happiness as an objective arose from the fact that people **now alive** want to be happy themselves and want their descendants to be happy as well. So it appears that ethical considerations have little to say about the number of births, except where these confer external benefits or disbenefits on other families.

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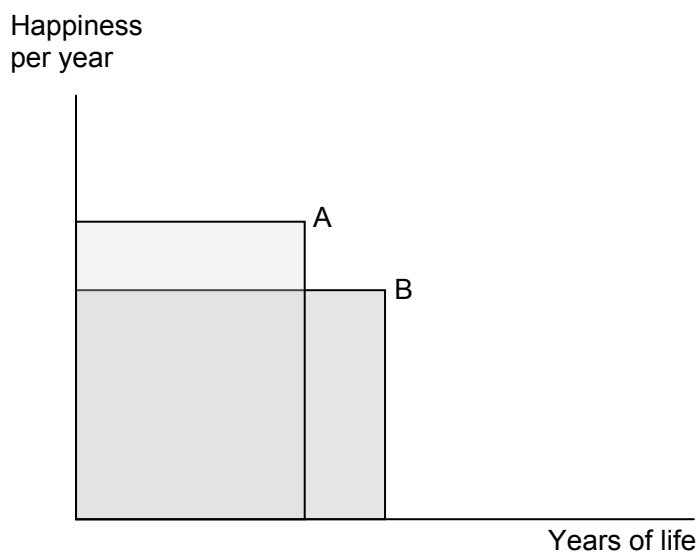
<sup>8</sup> Bentham (1995) ‘Bentham on population and government’, Population and Development Review, 21(2): 399-404, June.

## B. Increasing length of life

What about life expectancy? Most people now alive want to go on living. Indeed our two strongest drives are self-preservation and the pursuit of happiness. That is why we consider both objectives to be important – the preservation (i.e. extension) of life, and the quality of each year of life that is lived. Clearly if it is possible to extend a life at some positive level of well-being, we would want to do it even if the level of well-being were below the average for the community as a whole.

In that sense we would certainly not want our maximand to be the average happiness of those alive.<sup>9</sup> But the issue then arises of what trade-off should be assumed between the number of life-years per person born and the quality per life-year. In medical policy debates a typical maximand is the number of QALYs – or quality-adjusted life years.<sup>10</sup> The fundamental assumption here is that for any human who is born, the maximand is the product of length of life and the average quality of life. For example in Figure 1, the two lives shown are of equivalent value.

**Figure 1**  
**Two possible lives**



It is not easy to derive this maximand from first principles that would not also govern the number of births. The issue is the underlying trade-off between our wish to be happy and our wish to live long. It may be that we value equally a 1% increase

<sup>9</sup> Or even a **weighted** average that gives higher weight to the least happy.

<sup>10</sup> See Dolan, P. (2000) 'The measurement of health-related quality of life for use in resource allocation decisions in health care', in A.J. Culyer and J.P. Newhouse (eds) *Handbook of Health Economics, Volume 1*, North Holland: Elsevier Science. The WHO call these DALYs – disability-adjusted life-years.

in quality of life and a 1% increase in length of life, which could validate the criterion. But falsifying examples exist and the issue requires more research.

Moreover we probably value extending life differently according to the age of the person: we value differently an extra 20 years of quality-constant life given to a person newly born or to a person aged 40 or to a person aged 80. One reason for this is the impact on relatives – whose interest is usually disregarded in medical ethics.<sup>11</sup>

Thus there are many difficult issues where further empirical work can clarify the argument.

### **Future generations**

Finally there is the issue of future generations. We do care about them, as we care about other humans currently alive. But we take no view (apart from one based on externalities) about how many of them there should be.<sup>12</sup>

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<sup>11</sup> This is surely the main reason why we consider the death of a foetus so differently from the death of a neo-nates. We do not bury a foetus, nor count its extinction as a loss of QALYs. But we do bury neo-nates, even though their consciousness is little developed.

<sup>12</sup> I am extremely grateful to John Broome for helpful discussions, even though we differ on conclusions. In his book he advocates the maximisation of **total** utility above some critical level (J. Broome, *Weighing Lives*, Oxford University Press, 2004).

## Annex 11.1

### Rates of mental illness and the proportion of sufferers being treated

This annex shows the number of people suffering from mental illness (Table A), and the proportion of sufferers who are being treated within the medical care system (Table B). None of the figures can be strictly compared – they are indicative only. For similar findings see also WHO Mental Health Survey Consortium (2004), Table 5, covering 14 countries.

**Table 11.1A**  
**Prevalence of mental illness (%)**

	<b>Major depression</b>	<b>All mental illness</b>
US (1-year prevalence)	6.2	22
US (1-month prevalence)	2.4	13
UK (1-week prevalence)	2.6	16
Continental Europe (6-month prevalence)	6.9	

**Table 11.1B**  
**Percentage of sufferers treated in the medical system**  
**(In brackets: % of sufferers treated by a psychiatrist)**

	<b>Major depression</b>	<b>All mental illness</b>
US	47 (8)	25
UK	44 (8)	24 (3)
Continental Europe	57 (9) <sup>13</sup>	24 (3)

Sources:

US: Regier et al (1993), Tables 1 and 3. Based on ECA.

UK: ONS (2001), Tables 2.7, 5.2 and 5.8.

Continental Europe: Lepine et al (1997), p. 22-23.

On Australia see Sanderson (2003).

<sup>13</sup> Figures for depression are for “all depression”.

# **MENTAL HEALTH : BRITAIN'S BIGGEST SOCIAL PROBLEM?**

**Richard Layard**

## **Executive summary**

### **1. Why it matters**

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### **4. Ways to better services**

Objectives  
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**Paper presented at the No.10 Strategy Unit Seminar on Mental Health on 20<sup>th</sup> January 2005**

# MENTAL HEALTH: BRITAIN'S BIGGEST SOCIAL PROBLEM?

## Executive Summary

Mental illness is one of the biggest causes of misery in our society – as I shall show, it is at least as important as poverty. It also imposes heavy costs on the economy (some 2% of GDP) and on the Exchequer (again some 2% of GDP). **There are now more mentally ill people drawing incapacity benefits than there are unemployed people on Jobseeker's Allowance.**

Now that we have so successfully reduced unemployment, mental illness becomes the next priority target for action. This requires action on the social context and at the personal level. On the social context there needs to be a major attack on the stigma which creates massive barriers to the social engagement and employment of people with mental illness. The Social Exclusion Unit's report spells out many of the necessary steps, and this paper also shows what can be achieved by the welfare-to-work approach for many people with mental difficulties. But there is also the need, at the personal level, for a further wave of improvement in mental health services within the NHS. The next phase of NHS reform is planned to include more emphasis on chronic disease, and mental illness needs to have major priority within that context. This paper spells out the case.

In many ways mental illness today is like unemployment was ten years ago. The numbers involved are huge. According to the Psychiatric Morbidity Survey 16% of adults of working age have a mental illness, of whom up to a half are seriously ill. They are drawn from all ranks of society, and their condition profoundly affects at least as many relatives again. One might expect this to generate a strong political demand for better access to help from the NHS and from the job centres. But (as was the case with unemployment) misery, stigma and shame stand in the way of major expressions of concern.

A second reason for weak political pressure is that much of society, including some policy makers, are unaware of how much can be done to help mentally ill people. Until the 1950s there was little that could be done beyond improving the social environment. But today both drugs and modern psychological therapies can make a huge difference to the majority of patients. The evidence-based draft Guidelines drawn up by NICE recommend the options of psychological therapy and drugs for all serious mental illness. As the NICE Guidelines on depression put it,

“cognitive-behavioural therapy should be offered, as it is of equal effectiveness to anti-depressants”.

But little evidence-based psychological therapy is currently available. Patients’ biggest complaint of the service is the lack of psychological therapy, and partly for this reason there is more discontent about mental health services than almost any other aspect of the NHS.<sup>14</sup>

The great majority of NHS resources for mental illness go to the 1% of the population who have psychotic problems; and for people who are in serious depression there is usually little help other than a few minutes with the GP and some pills. Among people with depression only a half receive any treatment, only 8% have seen a psychiatrist, and only 3% have seen a psychologist.

By contrast if someone has asthma, diabetes, chest pain, high blood pressure, skin disease or neurological problems that a GP fails to relieve, they are automatically referred to a consultant-led clinic. Not so with major depression or other neurotic conditions. And, if they are referred for psychological therapy, the average waiting time is very long – typically 6-9 months, and in some places evidence-based therapy is not available at all. At the same time there are queues of people wanting to train as clinical psychologists, for whom there are not enough training places. So here is a problem that can be solved.

## **The improving context**

In the last five years our mental health services have improved enormously, especially our community services for clients with psychosis. We need to build on this success, providing better treatment to a much wider group of clients, and providing it earlier to prevent illness from taking root and costing much more later. If our aim is to empower people to control their own lives, psychological treatment has to be an important option.

To guide the next five years of improvement, we need some clear objectives, and actions to achieve them. Concentrating on people of working age, I suggest the following.

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<sup>14</sup> Healthcare Commission, 2004 Survey.

## Objectives

1. Clients should have the **choice of evidence-based psychological therapy** if they want it. (Within the next 5 years.)
2. There should be **local waiting time targets for psychological treatment**, monitored by the Healthcare Commission and progressively reduced. (Quite soon.)
3. Clients who do not improve through GP-led treatment should be **referred rapidly to consultant-led specialist services**, to prevent their condition becoming entrenched. The consultant can be a psychiatrist, psychologist or specialist nurse, as appropriate. There should be waiting time targets for these services. (Within the next 5 years.)
4. Clients should have easy access to high-quality **self-help** facilities. This is vital for purposes of prevention and for the recovery of independence. (Within the next 3 years.)
5. The mental health services, together with JobcentrePlus, should help clients to **return rapidly to work** wherever possible, and to remain in work.
6. **Stigma** must be reduced by all available routes including education in schools and changes in employer attitudes (see proposals in the Social Exclusion Unit's report).

## Actions

1. Some 10,000 extra psychological therapists need to be trained over the next five years. There will be two types of personnel. **About 5,000 people need a two-year Diploma in Therapy** obtained part-time while working on the job. These trainees will be either existing staff (nurses, OTs and social workers) or new psychology graduates. They would provide treatment either in the secondary sector or the primary sector, under suitable supervision and will be practising CBT or other evidence-based therapies.
2. **There should be an extra 5,000 clinical psychologists**, providing therapy as well as supervising other therapists and undertaking assessments. This requires a feasible doubling of the number of clinical psychologists in training.



3. The number of **psychiatrists** should be doubled within ten years and all new psychiatrists should be trained in CBT. To attract enough staff, promotion should be accelerated, financial incentives enhanced, conditions of work improved and the blame culture reduced.
4. The training of all **new GPs** should include a 6-month period of psychiatry (or equivalent part-time training), with an emphasis on the treatment of depression and anxiety in the community.
5. In planning the expanded provision of mental health services, **private providers** should always be considered, where they offer comparable effectiveness and cost.
6. There should be a quantitative **10-year plan** for mental health manpower.
7. **Self-help** should be systematically promoted by the development of materials, and by their distribution through NHS Direct, through NGOs, and through GPs and clinics. The Expert Patients programme should be greatly expanded.
8. The **welfare-to-work** approach developed in the Pathways to Work pilots for people on incapacity benefits should be adopted nationally.
9. These policies will require **substantial resources**. The Wanless Report recommended a doubling in resources for mental health in this decade. Although the government has designated mental health a priority, its share of HCHS expenditure is still only 13%, and little higher than in 1997.

# 1. WHY IT MATTERS

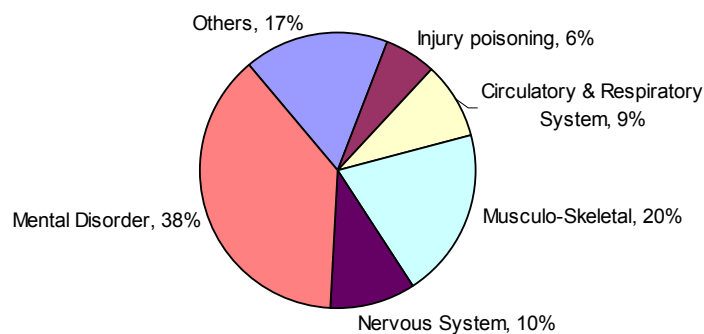
Mental illness matters because it causes massive suffering to patients and their families, because it prevents them contributing fully to society, and because it imposes heavy costs on taxpayers.

## Suffering

Mental illness is a major cause of disability:

- Of all people coming onto incapacity benefits, nearly 40% have mental health problems as their main disability, and mental problems are a secondary factor for another 10% or more.<sup>i</sup> (See Figure 1.)
- If we take the World Health Organisation’s calculation of “years lived with disability”, 40% of these are caused by mental illness or alcohol addiction.<sup>ii</sup>
- Of people going to GP surgeries, nearly one third have mental health problems; and mental health problems occupy one third of GP time.<sup>iii</sup>
- Studies of the impact of ill-health upon unhappiness show that mental disturbance explains more of the variance of unhappiness than any of the other seven main dimensions of ill-health (e.g. physical pain, physical immobility and so on).<sup>iv</sup>

**Figure 1**  
**Incapacity Benefits recipients by medical condition, 2004**



Given the importance of the problem, it is interesting to ask which is greater: the sum of misery caused by mental illness or by poverty? The National Child Development Study provided some evidence. For adults of 33 it assessed their mental health by adding up the positive replies to 24 specific questions relevant to mental health. It also asked people about the income per adult in their family, and about how happy or unhappy they were. Some 5% of adults said they were not very happy or not at all happy. Of these:

- 25% were poor (in the lowest tenth of income), but
- 41% were mentally ill (in the lowest tenth of mental health)

So mental factors accounted for at least as many unhappy people as low income did.

### **Economic cost**

Mental illness also **reduces output** – through time-off sick and non-employment.<sup>v</sup> The CBI has estimated the output lost from time-off due to depression, anxiety and stress. It is around £4 billion a year. People with mental health problems also have the lowest employment rate of any disabled group.<sup>vi</sup> If we compare the employment rate of mentally ill and other people in the Psychiatric Morbidity Survey, the difference in employment rates implies lost output of £9.4 billion. Adding this to the effect of time-off sick gives an estimated cost of £13 billion. If we added in the time of carers we would reach perhaps **£17 billion**.

On top of this there is the **real cost of public services** devoted to mental health. These were around **£8 billion** in 2002/3, broken down as follows:

#### **Public expenditure on mental health services (£ billion p.a.)**

GP time	0.9
Mental health trusts	4.9
Drugs	0.8
Social services	1.4
	<hr/>
	7.9
	<hr/>

Thus the total economic cost is around £25 billion – over 2% of GDP.

## Cost to the Exchequer

The tax payer bears many of these costs: the whole cost of public services, and the cost of lost taxes. In addition there is the transfer cost of benefit payments. There are now more people on incapacity benefits due to mental problems (850,000) than the total numbers of unemployed people on Job Seeker's Allowance.<sup>vii</sup> If unemployment was once the most prominent source of misery, it has been replaced by mental illness.

The cost of these benefits to mentally ill people is now around £10 billion. We can therefore summarise the economic and Exchequer costs of mental illness roughly as follows.

	<b>(£billion p.a.)</b>	
	<b>Cost to society</b>	<b>Cost to Exchequer</b>
Lost output	13	3
Carers time	4	1
Public services	8	8
Benefits	-	10
Total	<hr/> 25	<hr/> 22

These are substantial costs, but they would be less interesting if there were no way in which they could be reduced. Yet the evidence shows that more treatment will product major effects, whose economic benefits substantially exceed their costs.

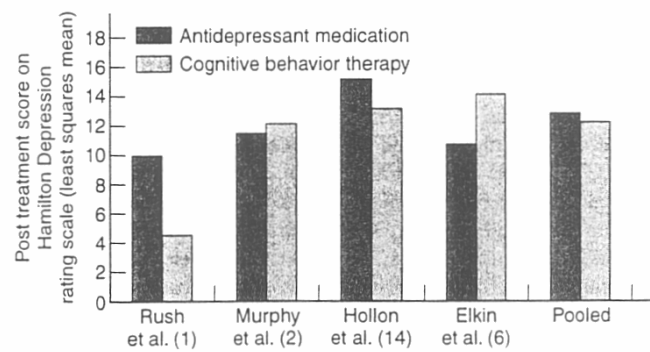
## Efficacy of treatment

The main treatments have all been developed since the Second World War. Modern psychiatric drugs were invented in the 1950s and have since been refined to reduce side-effects. They still need skilful diagnosis and prescription, and they can have bad side-effects if not properly managed. In addition, since the 1970s effective psychological treatments have been developed, especially cognitive behavioural therapy which can empower an individual to manage and transform his feelings – and thus his life. (CBT has even been found to double the rate at which unemployed people find work.)<sup>viii</sup>

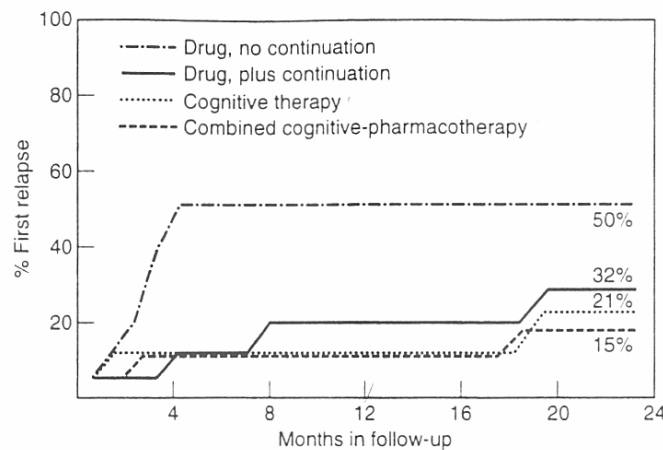
Both forms of treatment have been subjected to rigorous random assignment control trials that are fully analysed in the Cochrane reviews.<sup>ix</sup> The findings show that the majority of participants improve substantially with drugs or with cognitive

behavioural therapy (CBT) or both. This applies to schizophrenia, depression and anxiety. As a result the NICE Guidelines (or draft Guidelines) now recommend that both drugs and CBT of adequate duration should be available as options for treating these conditions.<sup>x</sup> Certain other therapies, like family therapy, are also recommended in some cases.

This is not the place to summarise the hundreds of trials that have been made (most of which are made against a placebo pill or a minimal talking therapy). I will give just two examples. In the treatment of severe depression both drugs and CBT do substantially better than controls, and both are about equally effective (see Figure 2). Broadly speaking, for people who become depressed, either drugs or weekly therapy will lift about 60% of them out of their depression within 4 months. After that the risk of relapse is greater for drugs, unless people keep on taking them. But if people's initial treatment was successful (be it CBT or drugs), and if drugs are continued where this was the treatment, then three quarters of these people will avoid further depression over the next two years (see Figure 3).<sup>xi</sup>



**Figure 2** Treatment response following medication or cognitive therapy for severe depression: meta-analysis of four randomized comparisons (DeRubeis et al, 1999).



**Figure 3** Relapse after successful treatment (Evans et al, 1992).

### Rate of return on treatment

We can use this type of information to examine very crudely the ratio of the benefits to the costs of treatment. Over a 2½ year period the costs would be roughly £1,000 per patient for either ongoing drug treatment or 16 sessions of CBT (including overheads).<sup>xiii</sup> The benefits over the same 2½ years can be estimated as roughly 8 additional months free of depression (compared with no treatment).<sup>xiii</sup> This relief is valuable above all because it enables people to enjoy life. But even if we concentrate solely on the additional output, the gains are substantial. Suppose conservatively that the 8 additional months free of depression led to 2 months additional work. This could generate £3000 of output – three times the cost. Many other illustrative calculations would record similar purely economic returns, on top of which comes the improved quality of life for the clients and their families.

It is especially important to intervene early because this reduces the chances of subsequent admission to hospital, which is very expensive.<sup>xiv</sup> More generally, early psychological treatment, though expensive, can reduce significantly the repeated GP visits and drug prescriptions, which are becoming a serious burden on the NHS.

So how widespread is mental illness, and what are we doing about it?

## 2. WHO SUFFERS AND HOW MANY ARE TREATED?

### How many suffer?

To understand the prevalence of mental illness, we rely on expert surveys of the population.<sup>xv</sup> We do not rely on patients reporting symptoms to their GP, which can become exaggerated in order to obtain incapacity benefits.<sup>xvi</sup> Nor do we rely on the demand for drugs, which can be inflated through sales talk from drug companies.

The surveys show that about one third of us experience mental illness in our lifetime, and 15% of us experience a serious disabling depression. If we include relatives, friends and colleagues, almost everyone has had contact with mental illness and knows its dreadful effects.

But, to think about care, it is best to focus on those who are suffering at a point in time. The Psychiatric Morbidity Survey is based on 90-minute interviews with nearly 9,000 adults aged 16-74 whose condition (if any) was diagnosed using the standard international (DSM IV) classification.

According to the survey, one in six adults are currently suffering from mental illness – some worse than others. The breakdown is as follows, with the conditions listed in roughly descending order of severity. The figures show the percentage of the adult population 16-75 currently suffering.

**Percentage suffering from mental illness**

	All	Women	Men
Psychosis (mainly schizophrenia)	0.5	0.6	0.5
Depressive episode	2.6	2.8	2.3
Generalised anxiety	4.4	4.6	4.3
Phobias	1.8	2.2	1.3
Obsessive compulsive disorder	1.1	1.3	0.9
Panic attacks	0.7	0.7	0.7
Other (mixed depression and anxiety)	8.8	10.8	6.8
Any of the above <sup>xvii</sup>	16.4	19.4	13.5

### Who are they?

Who are these huge numbers of people? They are not drawn mainly from some stereotypical group of people who are mostly poor, single, dependent on drugs

or drink, and dangerous to themselves (or others). There is a small group of people like that, who are mainly responsible for the relatively small number of murders committed by people with serious mental illness – around 40 a year and stable over many decades.<sup>xviii</sup> Nor are most mentally ill people the opposite – a group of middle class people with too much time for thinking about themselves.

In fact mentally ill people are drawn from every section of society and every age group. Mental illness affects most social groups and age groups in roughly equal proportions. This can be seen from Table 1 (at the end), which shows that the composition of people who are mentally ill is very similar to the population at large. Nearly two thirds of mentally ill people are married (or cohabiting). There is a slightly higher rate of illness among the poor than the rich, but action on mental health is fundamentally egalitarian not because it helps the poor but because it helps the most miserable.

In the nature of things the first onset of mental illness occurs more often in youth than in middle or old age. Early treatment of the first onset is vital to prevent illness becoming chronic; so young people need special attention. But what emerges time and again from the figures is the pervasive nature of mental illness in all sections of the community and in all age groups. It causes massive exclusion from the world of work, but it does not mainly result from exclusion.

### **How many are treated?**

Yet, of those now suffering from mental illness, only a quarter are in treatment (see Table 2). This reflects many factors

- (ii) They may not have gone to the doctor (due to stigma, fear, ignorance and doubts about the likely result).
- (iii) They may have been misdiagnosed – it is estimated that GPs misdiagnose mental illness at the first GP visit on a third of occasions, though this improves with further visits.
- (iv) They may have refused treatment.

Yet even those who **are** treated get a very limited amount of specialist care.

Of all people with mental illness (whether treated or not) only 3% have seen a psychiatrist in the last year and only 2% a psychologist. Even among people suffering from depression the proportions are very low – 8% have seen a psychiatrist and 3% a psychologist. Yet most readers of this paper, if they had a major depression, would **expect** this level of expert assessment and treatment.



As a result, most sufferers receive no treatment except drugs – normally prescribed by the GP. The only exceptions are patients with psychosis, who are much more likely to see a psychiatrist and to receive talking therapy – both because of their perceived level of suffering and the possible danger to themselves or the public.<sup>xix</sup>

Sufferers' biggest criticism of the system is the lack of psychological therapy.<sup>xx</sup> At the same time there is a huge queue of people waiting to train as clinical psychologists.

## **Other countries**

In other countries the broad picture of untreated mental illness is not wholly dissimilar to ours (see Table 3)<sup>xxi</sup>. Throughout the world there is inadequate provision of treatments that have been proven to help the majority of sufferers. And the main reason is a delayed response to the fact that we can now treat mental illness, which was almost impossible fifty years ago.

## **Trends in mental illness**

The main case for more attention to mental illness is that unnecessary suffering exists - along with huge economic waste and large budgetary burdens that could clearly be reduced using known techniques. However, there is also considerable evidence that mental illness has been increasing. The Psychiatric Morbidity Survey has been conducted twice, in 1993 and 2000. For women there was no change, but for men there was a significant 2 percentage point increase in the numbers currently suffering from mental illness (from 12½ to 14½% for men aged 16-64). This included an increase in serious depression (from 1.9 to 2.6%). The number of men dependent on hard drugs doubled, while the numbers of men and of women dependent on alcohol increased by a half.<sup>xxii</sup>

Over longer periods, the only trend data we have in Britain relate to 15-year-olds. Evidence based on questionnaires to parents suggests that emotional problems and hyperactivity did not rise between 1974 and 1986 but had risen substantially by 1999<sup>xxiii</sup> (see Table 4). Since 1974 there was also a steady increase in conduct disorder (stealing, lying, disobedience). British children now find their class mates less “kind and helpful” than children in any other major country except Russia (Table 5).

In a number of other countries there is evidence on trends in adult mental health which goes back for decades. Most of it involves recall data, which are

questionable, but some involves repeated population surveys. Most of the surveys suggest an increase in depression.

I have analysed the probable reasons for this elsewhere<sup>xxiv</sup> - more family break-up, the decline of community, more TV-induced awareness of how you 'could' live, and greater individualism. To reverse these trends requires greater investment in family-friendly policies (flexible hours, child care, parental leave), in community-building and in school education (on our responsibilities for each other). But in this paper I shall concentrate chiefly on how the mental health services can help. I shall focus on services for **people of working age** who are outside prison.<sup>xxv</sup>

### 3. THE SYSTEM OF CARE : GROWING STRENGTHS AND REMAINING WEAKNESSES

Altogether the system is treating at any one time some 2½ million people of working age.<sup>xxvi</sup> These are broken down as follows:

1,200k	not mentally ill according to the survey, but mostly taking medication (in many cases to prevent recurrence of illness)
1,300k	currently ill and mostly on medication, of whom
150k	in psychosis
350k	in clinical depression

To treat them, the system consists of:

- **GP practices**

Each year about 2¾ million people of working age consult a GP for some mental disorder.<sup>xxvii</sup> About 80% of all these clients go no further than the GP, and 2 million people of working age are now on psychiatric drugs, mostly prescribed by GPs.
- **Mental health trusts, which provide<sup>xxviii</sup>**
  - Hospital beds (33,000, mostly occupied by patients with psychosis), or other severe mental illness
  - Hospital out-patients' clinics (consultant-led; mainly for former in-patients)
  - Community Mental Health Teams (CMHTs), where GPs normally refer patients who need further assessment or help. These teams usually include a psychiatrist and a psychologist - otherwise mainly nurses who (with social workers) perform the vital function of helping people to manage their lives.
  - Three new types of multi-disciplinary team, focused on people with the most severe emotional and behavioural problems – often with psychosis:
    - Early Intervention, which attempts to catch and treat the first onset of psychotic conditions in people under 25.
    - Crisis Resolution and Home Treatment, which is the gateway service for serious new referrals – either passing them on for inpatient care, or supporting and treating them at home.
    - Assertive Outreach, which helps particularly disturbed people (often former in-patients) to conduct their lives in the community, often with out-patient support.

These teams are planned to handle quite small numbers of people, on a favourable staffing ratio as low in some cases as 1 to 10 (see Table 6). A major reason for the favourable staffing is the protection of the public and of clients themselves.

Taking all staff in mental health trusts, there has been a big expansion since 1999. We now have a total of 70,000 professional staff, of whom three-quarters are nurses or occupational therapists (Table 7). There are just over 7,000 psychiatrists (or doctors in training) and 5,300 clinical psychologists.

## Recent improvements

As a result of the National Service Framework and additional funds, the mental health service has improved greatly in the last five years. Not only has the number of staff increased but premises have been much improved and new treatments introduced. The three new types of team (already described) are being effectively developed, leading to better management of the most difficult cases. At the same time various new types of worker are being recruited and trained, including:

- New psychology graduates (1,000) employed in GP practices and being CBT-trained in-service for a one-year period.
- New carer-support workers (700) to support people caring at home for the mentally ill.
- New gateway workers (500) to coordinate access to the mental health services.

## Appraisal

The most striking feature of the system is its concentration on **the most difficult patients**, who are most likely to harm others or themselves.<sup>xxix</sup> The suicide reduction strategy has been very effective, and homicides by people with mental health problems have been kept low, despite the general rise in homicide. These are valuable results.

The least impressive feature is the poor quality of treatment for the majority of clients who suffer from **depression and anxiety disorders**. This failure is reflected in the ever rising numbers of mentally ill people on incapacity benefits. If we did more for these people, the economic return and financial savings could be substantial. There are three main needs.

1. Very many patients want **psychological treatments**. Moreover, clinical trials show that these treatments are as effective as prolonged medication and no more expensive. As the draft NICE Guidelines on depression put it, individual CBT “should be offered, as it is of equivalent effectiveness to anti-depressants”.<sup>xxx</sup> So the top new priority for the system is to offer patients the **choice of psychological treatment** (most commonly CBT) – and without long waits.

- First, this is needed for patients in primary or community care. They should normally be offered up to 16 sessions of CBT or related treatment. If roughly one third of those who come to the GP each year for mental problems went on to such treatment, this would require about 8,000 extra therapists. This is a large increase in the number of therapists, but there could be some reduction in other types of support.
- Second, patients in the wards should normally receive at least two hours therapy a week, plus therapy for 6 months after their first discharge – in line with the spirit of the NICE Guidelines.<sup>xxx1</sup> This could require some 2,000 therapists, again accompanied by some reduction in other services at the same time – and by serious savings due to reduced readmission rates.

This suggests that **we need some 10,000 extra therapists** giving evidence-based psychological treatment.

This requires a major training programme. There should be at least two levels of expertise. A large number of therapists should have a 2-year part-time diploma in therapy obtained while working on the job. Some of these should be experienced workers already in the service (nurses and counsellors and social workers) with the right human and intellectual skills, who would now shift to being therapists. Others could be new psychology graduates.

Clinical psychologists have a higher level of skill and, besides doing therapy themselves, they do assessments and can supervise therapists who have lesser expertise – an arrangement which is essential if the programme is to work. There is a huge waiting list for places in this (3-year) training, and extra places would therefore be easy to fill.<sup>xxxii</sup> Over the last few years intake has been rising by 15% a year.

2. There is also the need for **rapid access to specialist consultant-led assessment and care** whenever PCT treatment is not leading to improvement. The danger of chronic conditions becoming entrenched is much greater if appropriate

specialist care is not provided early on.<sup>15</sup> If I have asthma, diabetes, chest pains, blood pressure or a neurological disorder that a GP cannot cure, I am automatically referred to a consultant-led clinic. But, if I am mentally ill and not dangerous, I am referred by the GP to a Community Mental Health Team. These teams vary greatly in quality, and in waiting times. In some of them many patients never see a doctor or a psychologist.

We should therefore aim throughout the country at promoting high-quality Community Mental Health Teams (or, better-named, Centres). The treatment in these centres should be led by a consultant – most commonly a psychiatrist or a psychologist but where appropriate a nurse. The consultant would see the majority of patients or at least be involved in the design of their Care Programme.

At present this level of responsibility is not always possible, due to the shortage of consultants. But we should not on that account reduce the responsibilities of consultants; rather we should ensure that there are more of them on the ground.

We have already discussed expanding the number of psychologists, and a parallel but slower programme is needed in psychiatry. Psychiatrists, with their length and depth of training and their intellectual abilities, provide key leadership in mental health services. In the past some of them have been over-wedded to medication, but a new generation of psychiatrists is developing with a broad competence in a range of appropriate treatments.<sup>xxxiii</sup> It will be impossible to provide a much more comprehensive and effective service without a major expansion in the number of psychiatrists.

At present, as we have seen, the majority of psychiatrists are engaged in the treatment of psychosis. But in an improved service, we need psychiatrists to assess, and often care for, many of the more difficult cases of depression and anxiety. Any estimate of demand is bound to be somewhat arbitrary. A sensible target would be to double the number of psychiatrists. This should be the second step involved in raising our sights in the provision of mental health.

Psychiatrists take much longer to train than psychologists – a further 6 years after qualifying as a doctor. Between 2003 and 2008 the number of psychiatrist consultants is expected to grow by 800 (from 2,900 to 3,700). After 2008 there will of course be an expanded pool of younger doctors to draw upon, so a doubling over 10 years seems a feasible objective.

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<sup>15</sup> It is sometimes said that one third of drugs prescribed by GPs are inappropriate.

The vacancy rate for psychiatric consultants is now 11%, one of the highest in the NHS. Though psychiatry continues to attract some outstanding people, it has in many ways become less attractive in recent years.

First, pay. Until the early 1990s, mental health workers could reach pensionable age ten years earlier than other NHS workers. This provision could now be re-instated, while encouraging those older workers who could to go on working, drawing both pension and pay. Other financial measures would also help, including earlier promotion and more top-level merit awards for psychiatry (psychiatry is currently under-represented).

Second, the blame culture has made the job less attractive - especially homicide enquiries which are very costly. The Department of Health and every trust should counter this culture. Ministers could play a valuable role in setting a new tone.

Third, the quality of many psychiatrists is low because, with existing shortages, they cannot do the job properly. This is an issue that cannot be dodged.

However psychiatry will become more enjoyable if there are enough other psychiatrists to share the load – a virtuous circle, and enough other staff (especially psychological therapists and office assistants). Moreover psychiatry will also become more attractive as psychiatrists become more involved in psychological therapy as well as medication.

3. The final need is to enable clients to **help themselves**. This is particularly important as a preventative measure, but it is also important post-treatment, to prevent relapse. As described in the National Service Framework, one point of access would be through NHS Direct. A caller with an emotional problem would immediately be connected to a telephone counsellor specialising in one of a number of problem areas (depression, anxiety, relationship problems, parenting problems, substance abuse and employment/housing/finance/law). The counsellor would assess the client's needs and refer the client to good-quality self-help literature or computer-based treatment programmes (like Beating the Blues or Fearfighter) – or to relevant mental health services. (Evaluation of computerised CBT for both anxiety and depression has shown encouraging results.<sup>xxxiv</sup>) Voluntary organisations can also provide excellent self-help services and should be subsidised to do so.

By these methods many clients would be reached who are not now reached (due to shame, confidentiality worries, ignorance and so on). They would be reached earlier in their difficulties, so that their problems could often be dealt with before they become too severe – thus saving later expenditure and suffering.

## 4. WAYS TO BETTER SERVICES

In 1999 the National Service Framework for Mental Health set targets for a better service. Since then the service has improved greatly and the targets are getting close to achievement. **It is now time to set out higher ambitions for the next Parliament and beyond.** From the discussion in the previous sections emerge five objectives and nine sets of action needed.

### Objectives

#### 1. Choice

Clients should have the choice of evidence-based psychological therapy, with or without drugs.<sup>xxxv</sup> The types of therapy offered (whether through NHS staff or the private sector) should be limited to those of proven efficacy, and the choice should clearly be offered first to the most severely ill, including inpatients with psychosis. The aim within a Parliament should be to enable roughly a million more people a year to receive therapy (just over one third of those who visit a GP with mental health problems).

#### 2. Waiting times

At present there are no waiting time targets in mental health – except for ‘first-consultant appointments’ which are not a central feature of the service (except for clients with psychosis). As a result there is less pressure to improve services for people who are mentally ill than for those who are physically ill. Clients’ biggest complaint is the lack of psychological therapy and this is the area where the greatest change is needed. There should therefore be local waiting time targets for psychological therapy, monitored by the Healthcare Commission. They could be introduced very soon and progressively reduced. (The present average waiting time is 6-9 months.)

#### 3. Rapid access to consultant-led specialist services

Clients who do not respond to treatment in primary care should be swiftly referred to the specialist services, in order to prevent their condition becoming entrenched. Treatment should normally be consultant-led, be the leader a psychiatrist, a psychologist or a nurse. There would be waiting time targets for these services.

#### 4. Self-help

Anyone in mental difficulty should be able to ring NHS Direct and be connected to a trained advisor who refers them to self-help materials or relevant NHS or NGO services. It will take time to train counsellors and develop materials but this



could be done well within a Parliament. GPs and NGOs should also tell their clients about the available methods of self-help.

## **5. Welfare-to-work**

Mental health services would collaborate with JobcentrePlus in encouraging and helping all working-age clients who could do so to return to work. (See Section 5 below.)

These five objectives could be the subject of government commitments in any party Manifesto. To deliver them requires at least nine types of action.

## **Action needed**

### **1. Training of psychological therapists**

We need to train people to work as therapists in significant numbers in evidence-based psychological therapies; these will include CBT, systemic family therapy, psychosocial interventions and other dynamic therapies. These therapists may come from the existing professionals within the service or new psychology graduates. They should normally get a 2-year part-time Diploma while working on the job. Over a Parliament we should aim at training up to 5,000 such people.

### **2. Extra training places in clinical psychology**

In addition, there are currently some 550 clinical psychologists qualifying each year. If **training numbers were doubled**, we could achieve an extra 5,000 clinical psychologists (roughly double the present number) in the workforce by 2010. It will require careful planning by the NHS (which funds the places) as well as HEFCE and the British Psychological Society.

### **3. Extra psychiatrists**

The number of consultant psychiatrists should be doubled within ten years. This requires improving financial incentives and merit awards, accelerating promotions, reducing the blame culture, and improving conditions of work and support. All psychiatrists should have training in CBT and related therapies.

### **4. GP training**

The training of GPs should include a 6-month period of training in psychiatry (or equivalent part-time training), focussing mainly on the treatment of depression and anxiety in the community, and including some CBT.

## **5. Private services**

It is not important whether services are publicly or privately supplied, provided there is good control of quality and cost. To achieve the stated objectives and to improve competition, it may be necessary to increase contracting out. There are a number of counsellors and psychotherapists registered with the BACP<sup>xxxvi</sup> and UKCP, many of whom practise privately on a full or part-time basis or are employed in the voluntary sector (e.g. by MIND). Many people with mental health problems choose to access psychological therapies on this basis, or are driven to through lack of local access. This avenue should be actively explored as an additional means of increasing access through commissioning.

## **6. 10-year plan**

There should be a 10-year plan for the expansion of mental health manpower and services, of which the targets proposed here would be the first phase.

## **7. Self-help**

This should be developed in the ways outlined above.

## **8. Welfare-to-work**

The Pathways to Work programme should be adopted nationally (see next section).

## **9. Money**

The above programme may require some increase in the share of NHS expenditure going on mental health. Although the NHS Plan designated mental health (with cardiology and cancer) as a top priority, the share of expenditure is little higher than in 1997.<sup>xxxvii</sup> Action will be needed to persuade PCTs to give higher priority to mental health in their commissioning, and to provide them with specialist assistance in doing this.

## 5. WELFARE TO WORK

Finally, there is the key issue of the interface between the NHS and the world of work. For most people with mental problems, activity is an important path to recovery, and work (where it can be managed) is one of the most therapeutic activities. But currently we have a major problem of chicken-and-egg. Doctors are sceptical about whether their patients can find work or hold it down: and job centre staff, unless encouraged by doctors, are often loath to propose work to clients who are on incapacity benefits.

The problem gets worse the longer the person is on benefit. Though 90% of those who move onto incapacity benefits say they expect to work again and want to do so, this proportion falls steadily the longer they have been on benefit.<sup>xxxviii</sup> As time passes, social isolation increases and motivation decreases.

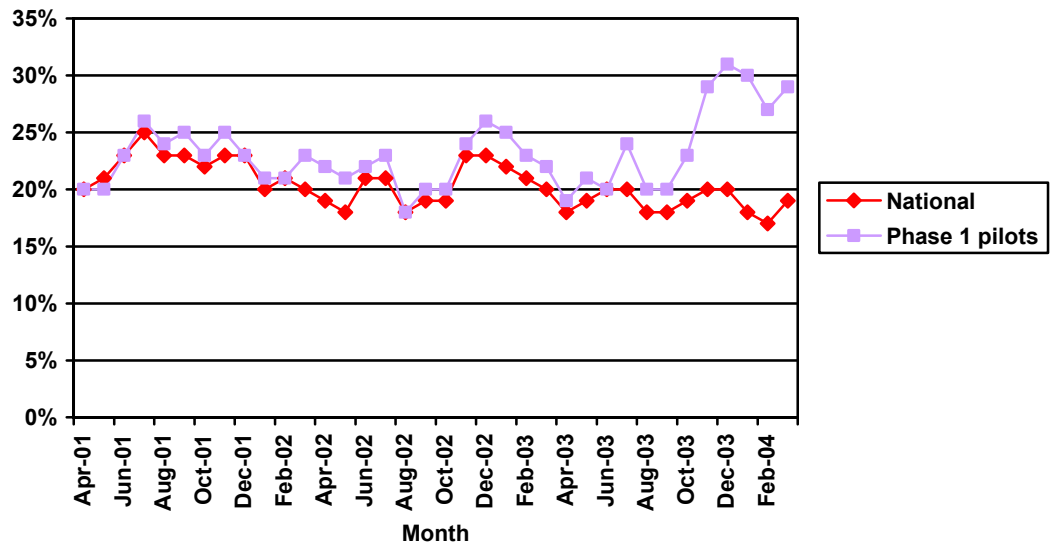
This vicious circle can only be broken by action at both ends. On one side, the world of work has to become easier to re-enter. On the other side, doctors have to stop the automatic signing of sick-notes, and to understand that work can often improve the quality of a patient's life.

This two-pronged attack is the essence of the government's Pathways to Work programme, which is currently being piloted.<sup>xxxix</sup> There are two key elements. First, most new entrants to incapacity benefits are required to have a series of six work-focussed interviews with a trained personal adviser, who will discuss with them in an objective way what kind of work they might eventually do and how they would prepare and adjust to it. These interviews happen monthly beginning with the third month of benefits.

Second, at the NHS end, patients receive a voluntary programme of rehabilitation, focussed on how to manage their 'condition' in normal life, particularly at work. This programme often includes elements of CBT. There is also a campaign to educate local GPs to recognise the potential therapeutic value of work and the dangers of patients drifting into permanent incapacity if the possibilities of some types of work are ignored. (In this context it would be an excellent idea if every Community Mental Health Team included a specific Employment Adviser). Other elements of Pathways to Work include a £2,000 per annum Return to Work Credit lasting a year, for people earning under £15,000, in order to overcome the poverty trap for those who return to work on low pay, short hours or both.

These Pathways to Work pilots are a joint DWP/DH venture which began in October 2003. As Figure 4 shows, the results have been remarkable – a 50% increase

**Figure 4 Percentage of entrants to invalidity benefits leaving in the first four months**



in the numbers leaving incapacity benefits, most of them into jobs. (This figure relates to all claimants; separate figures for mentally ill clients are not yet available.) Results on this scale will pay for the extra cost many times over. So the scheme should be rolled out nationally as soon as possible.

It is also important that as many people with mental problems as possible should keep their jobs, rather than becoming inactive. The Health and Safety Executive should therefore work more closely with employers to ensure that they are sensitive to the needs of mentally ill people.

## 6. CONCLUSION

The aim of all mental health services is to empower those whom they serve. Clearly such empowerment is not feasible, without more time to talk than is available with a GP. Thus the central proposal of the paper is that clients should have the option to choose evidence-based psychological therapy, beginning with those in greatest need.

Mental illness is a major source of suffering, probably worse than poverty. It leads to massive social exclusion and costs to the Exchequer. We could make major savings on these costs if we provided better services to the mentally ill, and especially if we did it quickly (without waits) when the illness begins. We should do all in our power to prevent people with mental illness becoming disconnected from society, and, if they have become so, to reconnect them.

At least a third of all families are today affected by mental illness. Because of shame, these people do not agitate. But they would certainly appreciate any political party which took their problems more seriously.

Note: I am extremely grateful for help and advice to a number of civil servants as well as to Stuart Bell, Professor Dinesh Bhugra, Professor Rachel Jenkins, Professor Martin Knapp, Elaine (Baroness) Murphy, Julia (Baroness) Neuberger, Professor Stefan Priebe, Cliff Prior, Sir Michael Rutter, Professor Graham Thornicroft, Leslie (Lord) Turnberg, Dr Ben Wright, and, especially Molly Meacher, who is a virtual co-author of the paper. I alone am responsible for the views expressed. The paper was produced with excellent support from Linda Cleavelly and Guy Mayraz.

**Table 1**  
**Who are the mentally ill, compared with those who are not mentally ill (%)**

	<b>Not mentally ill</b>	<b>Any mental illness</b>	<b>Depressive episode</b>	<b>Psychosis</b>
<b>Age</b>				
16-24	15	13	11	6
25-34	20	22	18	20
35-44	20	23	27	35
45-54	18	22	24	21
55-64	14	13	16	12
65-74	12	7	4	7
	100	100	100	100
<b>Family Unit</b>				
Couple no children	32	28	21	22
Couple and child(ren)	35	34	33	17
Lone parent and child(ren)	4	9	11	7
One person only	16	20	28	43
Adult with parents	3	1	1	3
Adult with one parent	10	8	5	10
	100	100	100	100
<b>Highest qualification</b>				
Degree	15	13	8	2
Teaching, HND, nursing	7	7	6	7
A Level	15	14	12	7
GCSE	36	35	36	44
No qualifications	27	31	38	40
	100	100	100	100
<b>Employment status</b>				
Employed	69	58	43	28
Unemployed	3	4	5	2
Economically inactive	28	39	52	70
	100	100	100	100

Source: Psychiatric Morbidity Survey, Tables 4.1, 4.2, 4.6, 4.7. 'Any mental illness' excludes psychosis.

**Table 2**  
**Percentage of sufferers who are in treatment, and how**

	<b>Not mentally ill</b>	<b>Any mental illness</b>	<b>Depressive episode</b>	<b>Psychosis</b>
Percentage receiving				
No treatment	96	76	56	15
Any treatment	4	24	46	85
Medication only	3	15	26	44
Counselling or therapy*, including	1	9	18	40
Psychotherapy	0	3	7	15
Behaviour or cognitive therapy	0	1	2	1
Percentage who in the last year saw				
A psychiatrist	0	3	8	26
A psychologist	0	2	3	4
Percentage who in the last quarter				
Visited outpatients	0	3	7	28
Was an inpatient	0	1	1	6

Source: Psychiatric Morbidity Survey ,Tables 5.2, 5.5, 5.7, 5.8, 5.11, 5.13, 5.14, 5.15

Note: 'Any mental illness' excludes psychosis. Psychosis figures are based on those assessed as "probable psychosis" cases.

\* This row includes the following numbers who were also on medication 0, 5, 14, 39.

**Table 3**  
**Sufferers in treatment: international comparisons**

<b>Percentage of sufferers who are in treatment</b>		
	Any mental illness	Major depression
Britain	24	44
US	25	47
Europe (rest)	24	

<b>Percentage of sufferers who have seen a psychiatrist</b>		
	Any mental illness	Major depression
Britain	3	8
US		8
Europe (rest)	3	9

Sources: US: Regier et al (1993), Tables 1 and 3.  
 UK: ONS (2001), Tables 2.7, 5.2 and 5.8.  
 Continental Europe: Lepine et al (1997), p. 22-23.  
 On Australia see Sanderson (2003).

**Table 4**  
**Percentage of 15 year olds with emotional, hyperactive or conduct problems**

	Emotional	Hyperactive	Conduct
1974	10.2	8.9	6.8
1986	10.5	7.1	10.4
1999	16.9	12.0	14.9

Source: Collinshaw et al (2004)

**Table 5**  
**% of 11-15 year olds agreeing that**  
**‘Most of the students in my class(es) are kind and helpful’**

Switzerland	81
Sweden	77
Germany	76
Denmark	73
France	54
USA	53
Russia	46
England	43

Source: WHO (2004a), Figure 2.18



**Table 6**  
**Three new types of team**

	<b>Number of teams (target figure)</b>		<b>Number of staff in teams</b>	<b>Number of patients covered (target)</b>	
<b>Early Intervention</b>	41	(50)	180	1,900	(7,500)
<b>Crisis Resolution</b>	174	(335)	2,072	21,000	(100,000)
<b>Assertive Outreach</b>	253	(220)	2,134	13,000	(20,000)
<b>Total</b>	468	(605)	4,386	35,900	(127,500)

Source: Louis Appleby. Data relate to August 2004

**Table 7**  
**Staff of Mental Health Trusts (England, FTEs)**

	<b>1999</b>	<b>2003</b>
Doctors		
Consultant psychiatrists	2,524	3,154
Others (mainly trainee grades)	3,550	4,148
Nurses	34,974	39,383
Clinical psychologists	3,763	5,331
Psychotherapists	365	631
Occupational therapists	10,792	13,053
Art/music/drama therapists	416	477
Approved social worker	N/A	4,200
<b>Total</b>		<b>70,377</b>

Source: DH Medical Workforce Census, September data. The figure of 3,154 for consultants relates to June 2004.

## Notes

**Annex 14.1**  
**Topics needing further research**

[TO COME.]

## Annex 14.2

### Selected reading (by chapter)

#### General

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<sup>i</sup> Department of Work and Pensions.

<sup>ii</sup> WHO, *The Global Burden of Disease*. The figures relates to USA and EU and are about the same in each area.

<sup>iii</sup> Social Exclusion Unit (2004) p.40.

<sup>iv</sup> Michalos (2004). He uses the 8 dimensions of ill-health provided in the SF 36 analysis.

<sup>v</sup> The source of this paragraph and the next three is Sainsbury Centre for Mental Health (2003). For the cost of carers' time I take one-half of the somewhat arbitrary figure in the Sainsbury Centre's paper.

<sup>vi</sup> Social Exclusion Unit, p.58. Based on the Labour Force Survey.

<sup>vii</sup> This includes those who by virtue of mental illness are on Incapacity Benefit (a contributory benefit), and Income Support (a non-contributory benefit).

<sup>viii</sup> Proudfoot et al. (1997).

<sup>ix</sup> See also Roth and Fonagy (2005).

<sup>x</sup> NICE (2002a); NICE (2003); NICE (2004). Section 9 of NICE (2003) on health economics evidence shows the cost-effectiveness of the contribution of CBT and drugs for treating depression when compared with drugs only. See also Department of Health (2001).

<sup>xi</sup> The sources for this paragraph are Craighead et al (2002, Tables 10.1 and 10.2), Hollon and Beck (2004, Figs 10.1 and 10.2), DHHS (1999, chapter 4), and DH (2001). The proportion who recover within 4 months of diagnosis are: 60% of those who are ‘treated’, 30% of those given placebo, and a smaller number who would recover spontaneously. Even for severe depression, drugs and therapy appear to be equally effective. All this evidence comes from controlled trials, with well-trained workers. There is little good evidence on results in the “field”. For a good survey of work on the cost-effectiveness of treatments see Knapp et al (2004).

<sup>xii</sup> NICE (2003), section 9, p.264.

<sup>xiii</sup> 1. I assume that, if untreated, the average period of a depressive episode is 9 months, followed by another 12 months depressed out of the following 21 (slightly worse than for “successful drugs, no continuation” in Figure 3).

2. I assume that, if treated unsuccessfully, the same pattern occurs, but that, for the 60% treated successfully, the average length of depression is 4 months and in the following 26 months only 3 months are spent in depression (see Figure 3). Thus treatment reduces months in depression by

$$.6(9 + 12 - 4 - 3) = 8.4.$$

<sup>xiv</sup> See for example the experience of the Lambeth Early Onset team whose pro-dromal interventions reduced the proportion of the target group eventually admitted to hospital from 80% to 55%. See also Craig et al (2004).

<sup>xv</sup> In addition a high proportion of people in prison are mentally ill (72% of sentenced prisoners have two or more mental health disorders (SEU, 2004, p.22)).

<sup>xvi</sup> For example, the proportion of people on incapacity benefits varies widely between high-unemployment regions and low-unemployment regions, while the proportions who are mentally ill vary much less (Psychiatric Morbidity Survey, Table 2.9).

<sup>xvii</sup> People can have more than one of the above, except for ‘others’ (none of whom have any other condition). Manic-depressives in the depressive phase will be classified in “depressive episode”. If they have no current symptoms, they will not be classified as ill (ditto with schizophrenia).

<sup>xviii</sup> Taylor and Gunn, quoted in Social Exclusion Unit (2004) p.26.

<sup>xix</sup> Altogether 65,000 people a year are referred to a consultant following self-harm.

<sup>xx</sup> Department of Health (2004a) p.6.

<sup>xxi</sup> It is extremely difficult to compare rates of mental illness in different countries and no convincing estimates are yet available. For some recent estimates excluding Britain see WHO (2004).

<sup>xxii</sup> This paper does not deal with these problems because so many other issues are involved, and mental illness uncomplicated by drugs and alcohol affects so many more people than are affected by serious alcohol and drug dependence.

<sup>xxiii</sup> Collinshaw et al. (2004).

<sup>xxiv</sup> Layard (2005).

<sup>xxv</sup> 72% of sentenced prisoners have two or more mental health disorders (SEU, 2004, p.22).

<sup>xxvi</sup> Psychiatric Morbidity Survey.

<sup>xxvii</sup> NHS Mental Health Statistics, Table 3.1.

<sup>xxviii</sup> Useful annual figures are as follows (2002/3, England)

Admissions to inpatient beds	174k
‘Formal’ admissions to hospital	27k
Finished consultant episodes	225k
Numbers in Secondary care (nearly all on CPA) (Q4)	607k

These are administrative data. The Psychiatric Morbidity Survey suggests that the number who see a psychiatrist is around 160k a year.

<sup>xxix</sup> Of £4.1b HCHS expenditure on mental illness in 2001/2, £2.4b went on in-patients, £0.5b on out-patients (largely former in-patients), £0.36b on day hospitals, and only £0.8b on community-based treatment.

<sup>xxx</sup> For psychosis drugs are essential, but CBT also helps in most cases once the extreme phase is over.

<sup>xxxi</sup> The guidelines on schizophrenia require that CBT, if used to treat schizophrenia, should last at least 6 months, and involve more than 10 sessions.

<sup>xxxii</sup> There is currently a 6% vacancy rate for psychology posts (Department of Health, 2004b, p.9).

<sup>xxxiii</sup> On new methods of organising the work of psychiatrists see Department of Health (2004a).

<sup>xxxiv</sup> NICE (2002b).



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<sup>xxxv</sup> NICE (2004), section 9 shows clearly the cost-effectiveness of adding CBT to drug treatment.  
<sup>xxxvi</sup> British Association of Counsellors and Psychotherapists. They have 21,000 members, most of whom are counsellors. The British Psychological Society has roughly 10,000 chartered members, mostly clinical psychologists – the majority of whom already work in the NHS.  
<sup>xxxvii</sup> The figures relate to spending on mental health secondary care as % of all NHS hospital and community services spending. See Rankin (2004), Figure 1.  
<sup>xxxviii</sup> DWP.  
<sup>xxxix</sup> See DWP (2002), chapters 4 and 5.

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