

Estimating the prevalence of common mental health problems in PCTs in England

A first approximation of the expected caseload for new psychological therapy services

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Summary

Planning for the new Department of Health programme to improve access to psychological therapies requires information about the numbers of people requiring its services. The National psychiatric morbidity survey programme provides some information about the prevalence of relevant disorders. This Brief outlines a method to apply if their findings locally. It is accompanied by a spreadsheet setting out the results of the analysis for PCTs and local authorities in England.

Not all those with these disorders need, would accept psychological therapies. The morbidity survey provides further evidence about how prevalent case numbers relate to treatment requirements.

Introduction

In 2006 the Department of Health in England announced a new programme to improve the limited availability of psychological therapies for people with more common mental health problems. Pilot programmes were initiated to explore new service delivery approaches. The approaches developed are now being deployed throughout England (Department of Health 2008).

Planning and commissioning any type of health care requires an estimate of the number of individuals in the population likely to need its services. This new programme requires Primary Care Trusts to identify the numbers of individuals likely to benefit from them in their geographic area.

This technical paper describes a simple method for estimating sufferers from common mental disorders on the basis mainly of findings from the 2000 National Psychiatric Morbidity Survey of people resident in private households. The results of the analysis are available through the NEPHO websites .

Sources

The most obvious way of establishing the numbers of people in each healthcare administrative area (currently the 152 PCTs of the Autumn 2006 boundary reconfiguration) might be to undertake a survey sufficiently large to give detailed results for each. Unfortunately no survey has been commissioned on a sufficiently large scale to provide direct answers for such small areas. National psychiatric morbidity surveys of adults in Britain have a sample size around 10,000 and are designed to produce results representative of the UK population at the level of NHS regions (2000 boundaries) or quinary age groups for people aged 16 to 74. The most recent survey for which findings have been published was undertaken during the year 2000. This was taken as the most authoritative available source.

A number of conditions, including acute stress reactions and post traumatic stress disorder, were not specifically identified by the diagnostic instruments used in the national psychiatric morbidity survey. The commentary, however indicates that to the extent that these give rise to symptoms of depression or anxiety, they will be covered by the broad category of mixed anxiety depression. The survey methodology is documented in detail by Singleton *et al* (2001).

Surveys on this scale provide good evidence about the variation in rates of mental disorders *between* the standard English regions. However their sample size is too small to provide direct evidence about the variations in prevalence *within* regions which are widely recognized to occur. Following the first such survey, undertaken in 1993, the Department of Health commissioned the methodology section of the Office of National Statistics to undertake a modelling study to explore these patterns of variation in more detail (Heady & Ruddock, 1996). This exercise exploited the design of the

cluster sampling used in the survey to derive prevalence estimates, for any neurotic disorder and for depressive disorders, for each of the 200 postcode sectors sampled. Because the authors had access to the geographic identity of the sectors, census and other details of the sectors were available to them. Using a range of regression techniques they developed models to predict these prevalences on the basis of indicators of area type (rural/urban and metropolitan or London Borough or not), the proportion of working age women who were married and the proportion of economically active men who were unemployed. In many respects this modelling exercise now looks a little dated, however no comparable work has been done since. The structure of the Heady and Ruddock model for all neurotic disorders was therefore used, recalculated with data from the 2001 census, to estimate the distribution of likely cases between PCTs within each region. No similar study has been undertaken using the 2000 survey, possibly because its sample design was less suitable. For greater efficiency in producing national results, it used a 'less clustered' design, with a larger number of postcode sectors (438) and a smaller number of addresses sampled at each (36 instead of 90).

Population data were taken from the ONS normally resident population estimates for mid 2005. The lower super output area data, for the age group 16 to 74, in quinary bands were used. These were grouped to 2001 census statistical wards (CASwards) for analysis. CASwards were subsequently grouped to the boundaries of 2006-reorganisation PCTs, and lower and upper tier local authorities for data presentation. These geographic reassignments were undertaken using the patterns of residential address counts in current, small-user postcodes in the May 2007 all-fields postcode table.



Calculations and comparisons of methods

Calculations were undertaken for the six types of neurotic disorder separately identified by the psychiatric morbidity survey, and for the summary group of 'any neurotic disorder'. This seventh category is not a simple sum of its six components, since individuals may suffer more than one disorder. The figures presented in published tables represent rates (per thousand population) of sufferers within the week preceding interview. Using these, along with the current population estimates, total numbers of male and female sufferers for each type of disorder for England as a whole were calculated. These figures were taken as control totals.

Regional totals were then calculated by multiplying the regional, all-ages prevalence figures, for men and women, for each disorder, by regional population figures. The totals of the resulting figures differed slightly from the national control totals. These were therefore normalised by multiplying them by the ratio of the control total to the regional sum.

A second adjustment for age profile was explored. Strictly, this can be criticised for two reasons: firstly, age structure differences should already have been encompassed in the regional figures. Secondly age profile data were published only for the total sample, roughly 15% of which comprised individuals from Scotland and Wales. The advantage of this approach, however, is that it permits distinct figures for a range of age groups to be presented. Age profile adjustments were undertaken similarly to the regional adjustments. Anticipated numbers of cases for each age, sex and region were produced by multiplying the published age-specific prevalence figures by the number of the corresponding population for each region. Regional totals for men and women, for each disorder were calculated from these. Age and sex specific numbers were then adjusted separately for each region by the ratio of the regional control totals (as calculated above), to these summed regional values.

The distribution of cases within each region was estimated next. In the fully region-age-sex constrained calculation, this exercise was done for region-age-sex specific groups. For each CASward, an estimate of the number of people likely to suffer any neurotic disorder was made on the basis of its current population and the prediction, given its characteristics, from the Heady Ruddock model. These region-age-sex case numbers were then constrained, using the method described above, to the control total for the region-age-sex group.

Finally summary rate figures were calculated for PCT aggregates, by sex only, by dividing the total number of predicted cases by the total population.

A rough sensitivity analysis was calculated to see how much difference the two levels of constraining had had on PCT level results. Figures for this were calculated first by omitting the constraint to age patterns, and then by omitting constraints to both regional and age distributions and simply constraining the predicted case numbers from the Heady Ruddock model to the national totals suggested by the psychiatric morbidity survey data. These three estimates for PCTs were compared. The first two correlated very closely with each other (0.99 for both women and men). Correlations with the Heady Ruddock only method were weaker. The region-age-sex constrained, and Heady Ruddock only models had correlation coefficients of only 0.79 for women and 0.59 for men, while the region-sex model had corresponding correlation coefficients of 0.78 and 0.60. From this it was concluded that the regional level of constraint was certainly important, as the Heady Ruddock figures alone would not agree with more recent, more authoritative sources. The added age constraint seemed to have virtually no effect on PCT level summary figures. It was retained in order to age specific presentations if these should be necessary.

Calculations were undertaken using Microsoft access. Statistical analyses used STATA version 10.0

Presentation of results.

The figures calculated were predicted quinary age-band and sex specific case numbers for the six individual neurotic diagnoses, and the summary 'any neurotic disorders' figure, for each CASward in England. The accompanying spreadsheet offers two presentations. Overall rates (per 1000 population) for people aged 16-74 for any neurotic disorder, and for each of the separate disorders, are presented for 2006-reorganisation PCTs, and the two levels of local government. More detailed tables present predicted case numbers by sex and quinary age band for each of these geographies. The detailed tables are intended to support flexible local presentations. The level of detail given is too small for appropriate presentation, as is apparent from the fact that a number of cells predict no cases (reflecting the lack of observed cases in the morbidity survey on which the calculations are based).

Detailed local figures can be found on our website:

www.mentalhealthobservatory.org.uk/dementiaprojections



Interpretation

The data presented are only an estimation of the numbers likely to be diagnosable with each condition at any point in time. These rates were relatively stable between the 1993 and 2000 morbidity surveys. However not everyone with the condition seeks, or wants, treatment, and some will already have received it. While many do not, at least some cases resolve spontaneously.

The 2000 national psychiatric morbidity survey, on which these calculations were based, provides useful further evidence here. Eighteen months after the initial interviews, the researchers attempted to follow up all individuals rated as having a 'case' level of symptoms, all those receiving treatments and a sample of others. Of the 750 individuals initially identified as having a neurotic disorder, roughly half had recovered by the time of the second interview, and roughly half had consulted a professional or received treatment. A higher proportion of those *not* consulting had recovered, presumably reflecting the fact that those with more severe or chronic symptoms were more likely to have sought help. A sub-sample of those with common mental disorders was interviewed further by a doctor, using a schedule designed to identify patients for whom treatment would be appropriate. These interviews provide figures for the proportions of those with disorders who have not had psychological therapies, are judged likely to benefit, and are prepared to have them. For anxiety disorders the figure is around 20%, for

depressive disorders, 17%. In each case roughly 5% of sufferers had received psychological therapies.

The national implication of this is that a best approximation for the number of people with common mental disorders, for whom a new psychological therapy initiative is required, would be about one fifth of the numbers in the tables accompanying this paper. This fraction is, however, likely to vary considerably from place to place as a result of the differing availability of psychological therapies prior to this programme. The morbidity survey will not illuminate the pattern of these shortfalls. The first mental health brief in this series outlined patterns of service provision around the country. In formulating local roll-out plans for new psychological therapies, these issues should also be considered.

References

Department of Health (2008) Choices in Mental Health website – Psychological Therapies.

<http://www.mhchoice.csip.org.uk/psychological-therapies.html> Accessed 3rd May 2008

Heady, P. & Ruddock, V. (1996) Report on a project to estimate the incidence of psychiatric morbidity in small areas. London: Methods and Quality Division, Office for National Statistics.

Singleton, N., Bumpstead, R., O'Brien, M., *et al* (2001) *Psychiatric morbidity among adults living in private households, 2000*. London: The Stationery Office.

Key Questions

Service users and representative groups:

How do people usually get access to psychological therapies?

Could these channels be made easier?

Are they similarly accessible for all age, sex and ethnic groups?

Commissioners:

How do the total numbers of people in our area receiving psychological therapies compare with estimates of the numbers likely to be benefit?

Are there differences in the age, sex and ethnic profiles suggestive of differential accessibility?

Providers:

Do we have systems in place to monitor access in ways that can identify variations in the accessibility of routes in to psychological therapy services?

Do all those receiving care get recorded for outcomes evaluations and, through the National Mental Health Minimum Dataset, for national statistics?

How many PCTs can identify volumes of clients served and their outcomes?



Table 1.

Estimated rates (sufferers pre 1000 population aged 16-74) and case numbers, for six types of neurotic disorder and for any neurotic disorder, by PCT. The table shows figures for the ten highest and lowest PCTs by rate for any disorder.

Details, and data for all PCTs are in the spreadsheet appendix.

PCT Name	Any neurotic disorder	All phobias	Depressive episode	Generalised anxiety disorder	Mixed anxiety depression	Obsessive compulsive disorder	Panic disorder
Rates per 1000 population							
Top ten							
Manchester	263.2	35.2	35.2	74.7	146.0	24.1	3.5
Liverpool	262.2	34.4	35.9	77.9	143.0	23.2	3.6
Knowsley	247.0	32.4	34.2	76.9	133.2	21.0	3.6
Salford	227.6	30.2	30.6	69.3	124.0	20.0	3.2
Wirral	220.5	28.6	30.5	69.9	118.3	18.7	3.3
Bristol	218.3	24.8	16.9	51.9	126.6	11.6	8.2
Sefton	216.1	28.0	29.7	68.8	115.9	18.2	3.2
Heywood, Middleton and Rochdale	216.0	28.5	29.7	67.8	116.4	18.5	3.1
Islington	212.7	25.7	40.6	60.6	100.0	18.3	9.7
Blackpool	212.3	27.7	29.0	67.5	114.2	18.0	3.0
Bottom ten							
Leicestershire County and Rutland	124.3	12.2	20.4	34.5	64.6	6.8	4.2
Worcestershire	122.4	12.3	14.7	30.8	72.9	7.4	1.3
Warwickshire	121.4	12.2	14.5	30.3	72.5	7.3	1.3
Bassetlaw	121.3	11.9	20.0	34.3	62.9	6.5	4.2
Buckinghamshire	120.5	10.0	16.8	32.1	66.8	6.3	6.4
North Lincolnshire	119.8	11.7	19.7	33.8	62.2	6.4	4.1
South Staffordshire	119.2	12.0	14.2	29.9	71.0	7.2	1.3
Lincolnshire Teaching	118.1	11.5	19.3	33.0	61.4	6.4	4.0
Herefordshire	113.9	11.3	13.6	28.9	67.6	6.8	1.2
Shropshire County	111.0	11.0	13.3	28.1	66.0	6.6	1.2
Estimated cases							
Top ten							
Manchester	88398	11821	11831	25079	49012	8107	1164
Liverpool	86025	11281	11781	25572	46923	7605	1196
Knowsley	27050	3545	3743	8427	14588	2300	393
Salford	36357	4824	4896	11075	19811	3195	505
Wirral	49165	6379	6811	15580	26365	4162	727
Bristol	66973	7602	5184	15922	38842	3551	2523
Sefton	43377	5616	5972	13804	23270	3650	638
Heywood, Middleton and Rochdale	32015	4226	4398	10056	17253	2737	463
Islington	31031	3743	5915	8846	14583	2663	1420
Blackpool	21951	2867	3000	6977	11814	1862	315
Bottom ten							
Leicestershire County and Rutland	60912	5981	9983	16901	31658	3349	2082
Worcestershire	49190	4933	5891	12378	29286	2962	526
Warwickshire	46138	4634	5506	11533	27552	2786	490
Bassetlaw	9886	967	1626	2796	5127	533	340
Buckinghamshire	43357	3582	6053	11561	24049	2269	2304
North Lincolnshire	13460	1316	2213	3796	6981	722	464
South Staffordshire	52916	5330	6324	13273	31516	3197	564
Lincolnshire Teaching	58747	5696	9614	16399	30540	3171	2012
Herefordshire	14520	1440	1739	3689	8622	865	154
Shropshire County	23173	2305	2769	5873	13771	1385	247

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