The social cost of cold homes in an English city: developing a transferable policy tool

Bernard Stafford

Centre for Health and Social Care Research, Sheffield Hallam University, Montgomery House, 32 Colleigate Crescent, Colleigate Campus, Sheffield, UK
Address correspondence to Bernard Stafford, E-mail b.stafford@shu.ac.uk.

ABSTRACT

Background Although there is substantial epidemiological evidence implicating cold homes in death and morbidity, evidence for the UK on the nature and scale of the costs involved is fragmentary. Policy making in this area is thus not well-informed of the benefit of interventions which arises in the form of costs averted.

Methods This pilot study presents estimates of the social cost of harms to health caused by cold homes in the City of Sheffield. All costs are monetized and are for 1 year. Different elements of social cost are distinguished as are different types of harms to health. Because all estimates are derived from readily available secondary data the estimating framework is readily transferable to any other English local authority area.

Results The social cost arising from losses of well-being are shown to dominate other elements of social cost including National Health Service and Social Care costs, and the social cost arising from mental illness is shown to dominate that arising from other harms to health including death.

Discussion The implications of the results for the application of fiscal rate-of-return and social cost–benefit tests are discussed. Several areas are identified in which research reported in this pilot study could be improved on and expanded.

Keywords public health, morbidity and mortality, economics

Introduction and background

Although a large body of epidemiological evidence associates cold homes with a wide range of adverse health outcomes, evidence on the costs that such outcomes impose on those afflicted and on other members of society is limited and fragmentary, and officially acknowledged to be so—‘the annual cost to the NHS of treating winter-related disease due to cold private housing is over £850 million. This does not include additional spending by social services, or economic losses through missed work. The total costs to the NHS and the country are unknown’.¹ And as Fenwick *et al.*² report there is a near total absence of evaluations of housing improvements which incorporate estimates of the social cost of cold homes.

This paper reports a pilot case study designed to estimate the monetized 1 year social cost of cold homes in the City of Sheffield, with total social cost disaggregated by type of harm to health and by key components of social cost. The aim is to develop a baseline estimate of the scale and nature of the social cost burden of cold homes in order to assist local

policy-makers in prioritizing and targeting policies to avert the deaths and illnesses suffered by those living in cold homes. As the estimates are entirely derived from readily available secondary data, the estimating framework is transferable to any other English local authority area.

Sheffield, the third largest city in England, is less prosperous than the region to which it belongs and the national UK economy, largely due to a steep and prolonged decline in employment in its traditional industrial base of steel making and the manufacture of metal products. Its recent economic history is fairly typical of many European cities whose rapid development in the second half of the nineteenth century was based on heavy industry.

Section 2 gives an overview of the estimation methods (which are described in detail in a separate technical appendix). Section 3 contains a brief note about the transferability of the estimates. Section 4 presents details of the social cost estimates.

Bernard Stafford, Visiting Research Fellow

Section 5 identifies the main findings and indicates how the results of this pilot study could be expanded on and improved by further research.

An outline of methods

Types of illness and categories of social cost

Social cost estimates are derived for those harms to health for which there is reasonably well-established evidence implicating cold homes, which include death, cardio-vascular disease, respiratory illness and falls in the home. For surveys of this evidence see.^{1,3,4} In addition a smaller number of recent studies have identified a link between cold homes and common mental disorders (anxiety and milder forms of depression). Although the causal pathways involved in this link have yet to be fully identified they seem likely to involve stressors including thermal discomfort and persistent worries about fuel costs and the adverse effect of living in a cold home on physical health. For a review of this evidence and an interpretation of the causal links involved, see Liddell and Guiney.⁵

Following the precepts of cost–benefit analysis and the example of Layard *et al.*⁶ a distinction is observed between two broad components of social cost: the monetary value of the direct loss of well-being suffered by those whose health is harmed; and the cost falling on others as a concomitant of the loss of well-being, which consists of National Health Service (NHS) and Social Care expenditures and the loss of economic output (GDP) where those afflicted are of working age.

Estimating social costs

For each type of harm to health total social cost is the product of an estimate of case numbers and a specified set of money costs per case which cover the different elements of social cost identified above. All costs are thus monetized, and are for 2011–12.

All deaths are assumed to occur at the beginning of the year in question and all cases of morbidity are assumed to extend over the full year. Issues relating to the incidence of cases across multiple time periods and to the impact of policy interventions on case numbers are not analysed.

Following Gilbertson *et al.*⁷ cases of morbidity involving cardio-vascular and respiratory disorders and falls in the home are derived from harm-to-health likelihood coefficients provided by the national Housing Health and Safety Rating System (HHSRS)⁸ which set the number of persons affected per household at one. Those involving mental illness are derived from data provided by Harris *et al.*⁹ using adjustments to ensure consistency with the estimates of cases derived

from the HHSRS. And in three instances—death, falls in the home and common mental disorders—the estimates of case numbers are adjusted to take account of the fact that it cannot be plausibly assumed that harm to health is uniquely associated with cold homes.

Because official data on care costs do not distinguish morbidities related to cold homes from the same or similar conditions arising from other causes, it is difficult to identify appropriate and reasonably precise unit NHS and Social Care costs. The unit care costs specified below should thus be thought of as plausible broad approximations rather than precise estimates.

The estimates of well-being costs per case do not assume that those whose health is harmed by cold homes would otherwise be free of illness and disability, but rather that they would otherwise enjoy the average level of health of the general (national) population in the age group to which they belong.

Although local data are used to derive estimates of case numbers and unit costs, the use of several additional items of national data means that the estimates are subject to potential bias. We evaluate this bias and identify other causes of a difference between the estimates and true social cost. As all such causes work in the same direction to reduce estimated cost below true cost, our estimates of social cost are conservative.

Case numbers

Estimates of 1 year case numbers are derived as follows

- *Death*—annual average excess winter deaths for the Sheffield Local Authority area for the period 2008–11 from West Midlands Public Health Observatory,¹⁰ modified by a national ‘Marmot Adjustment Coefficient’ of 0.215 (see Appendix section 1).
- *Cardio-Vascular Disease*—the HHSRS national harm-to-health likelihood coefficient for the hazard of excess cold (1/380) multiplied by the number of local households in which at least 1 person aged 65 or above resides (see Appendix section 2).
- *Respiratory Illness*—the HHSRS national harm-to-health likelihood coefficient for the hazard of damp and mould (1/464) multiplied by the number of local households in which at least 1 person aged 16 or below resides (see Appendix section 2).
- *Falls in the Home*—the number of local households in which at least 1 person aged 65 or above resides multiplied by the HHSRS national harm-to-health likelihood coefficient for the hazard of falls on the level (1/135), plus the same number of households multiplied by the HHSRS national harm-to-health likelihood coefficient for the hazard of falls on stairs (1/245), with the sum modified by the national ‘Marmot Adjustment Coefficient’ of 0.215 to

account for falls in the home not attributable to low indoor temperatures (see Appendix section 2).

- *Common mental disorders*—the total number of local households multiplied by the national proportion of adults using less domestic fuel than needed to heat the home due to cost worries who also suffer from a common mental disorder with the proportion adjusted to account for those using less fuel due to cost worries who suffer from a common mental disorder due to other causes, and with the product reduced to cover only those affected who receive treatment (see Appendix section 3).

It is important to bear in mind that the set of HHSRS harm-to-health likelihood coefficients and the proportions estimated by Harris *et al.*⁹ from which all cases of morbidity are estimated are national averages—defined for national values of those factors which expose individuals to harms to health associated with cold homes. The most immediate of which are the thermal efficiency of dwellings and the disposable income of household residents coupled with the price of domestic fuel. Thus, the estimates of local cases will be biased to the extent that there are differences between local and national profiles in respect of these factors. This can be assessed from official data on fuel poverty, which is determined by the interaction of these three factors. On the official, low-income high cost measure local and national rates of fuel poverty for 2011 are virtually identical—11% of Sheffield households versus 10.9% of national households.¹¹ Although local household incomes are below the national average, the effect of this on the ability of local residents to keep warm at home is more-or-less exactly offset by the higher local proportion of dwellings in the social rented sector, the thermal efficiency of which higher than that of other tenures. Thus, the estimates of local cases of morbidity are unlikely to be subject to significant estimation bias on account of the use of the above national coefficients and proportions.

Social costs per case

Social costs per case are specified as follows

- *Loss of Well-Being*—£40 000 for the value of 1 year of healthy and disability-free life, combined with World Health Organization Disability Adjusted Life Year weights of 1 for death, 0.4 for cardio-vascular disease, 0.25 for respiratory illness, 0.3 for falls in the home and 0.2 for common mental disorders, with morbidity weights taken from World Health Organization.¹² These weights are adjusted for the probability that those afflicted would not otherwise enjoy full health (see Appendix section 4)
- *National Health Service and Social Care Cost*—for cardio-vascular disease £3 124 per case for NHS Primary,

Secondary and Tertiary Care and non-NHS Social Care; for respiratory illness, £4359 per case for NHS Primary, Secondary and Tertiary Care and non-NHS Social Care; for falls in the home £2 453 per case for NHS Primary, Secondary and Tertiary Care and £390 per case for Social Care and for common mental disorders £1 543 per case for NHS Primary, Secondary and Tertiary Care and non-NHS Social Care (see Appendix section 5).

- *GDP loss*—£682 per case of common mental disorders for those of working age, derived from the estimates of Layard *et al.*⁶ (see Appendix section 6).

In the case of common mental disorders, the specified care costs per case are significantly less than true unit care costs on account of two factors the effects of which we have not estimated. The first relates to the well-documented NHS treatment deficit for anxiety and depression disorders¹³ which is at least partly compensated for by informal care provided by family and friends, which should be counted in along with NHS and Social Care costs in any estimate of social cost. The second relates to equally well-recognized mental ill health co-morbidities. As Naylor *et al.*¹⁴ report mental ill health is associated with worse outcomes for a range of physical illnesses and thus with increased NHS and Social Care costs for such illnesses. These costs should also be counted in along with direct NHS and Social Care costs.

Transferability

Because the official secondary data used to derive the case and unit cost estimates for Sheffield is routinely published for all other English local authority areas, the estimating framework is readily transferable to any other English local authority area, provided that any estimating bias resulting from the use of additional items of national data is corrected for. The computational effort involved in any such transfer is relatively modest.

Results

Table 1 shows the result of applying the methods outlined in the Methods section, with the estimated total 1 year social cost of just under £20 million distributed by harm to health category (the row third from bottom) and by cost category (the final column). It should be recalled that the social cost estimates for all morbidities are conservative because of the one-person-per-household property of the estimation methods used, and that those for common mental disorders are subject to an additional downwards bias on account of the exclusion of the cost of informal care and of co-morbidities.

Table 1 The social cost of death and illness related to cold homes, Sheffield, 2011–12, £ million

	<i>Death</i>	<i>Cardio-vascular illness</i>	<i>Respiratory illness</i>	<i>Falls at home</i>	<i>Common mental disorders</i>	<i>Total cost</i>
Loss of well-being	£1.856	£1.600	£1.311	£1.123	£9.638	£15.528
NHS primary secondary and tertiary cost plus social care cost	—	£0.391	£0.602	£0.333	£2.112	£3.438
GDP loss	—	—	—	—	£0.934	£0.934
Total social cost	£1.856	£1.991	£1.913	£1.456	£12.684	£19.900
Number of cases	58	125	138	117	1369	—
Total social cost per case	£0.032	£0.016	£0.014	£0.012	£0.009	—

Discussion

Main findings

The estimated social cost of cold homes is dominated by losses in the quality of life—by the loss of well-being suffered by those who die or become ill because they live in cold homes. By comparison the cost of cold homes which fall on others—the cost of Health and Social Care services for those who suffer such illnesses and the resulting loss of economic output—is relatively small. Mental illness associated with cold homes imposes a social cost which is 75% greater than the combined social cost of all other harms to health associated with cold homes including death, and almost seven times greater than that of death alone. The dominance of social cost arising from mental illness reflects the relatively large number of estimated cases rather than a high social cost per case.

These findings carry an important implication for the application of conventional rules of public policy appraisal. Under a fiscal rate-of-return test, the public expenditure cost of a policy intervention is compared with the induced down-the-line savings in public expenditure, whereas under a cost–benefit test the comparison is between the public expenditure cost of the policy and the induced public expenditure savings *plus* the value of non-fiscal social gains—in the present context the value of well-being gains which result from better health plus the induced gain in economic output. Any policy on cold homes which passes a fiscal rate-of-return test will automatically pass a cost–benefit test (because reduced public expenditures on care services are generated by health gains which in turn generate a GDP gain), but the reverse is not necessarily the case. Consider a policy for which the public expenditure cost exceeds the induced public expenditure savings, but for which the value of the gain in well-being plus that in GDP is greater than this excess. This policy would fail a fiscal-rate-of return test but pass a more encompassing and arguably more satisfying cost–benefit test. Such a policy will be typically one which generates significant

health-related gains in well-being and GDP but only modest savings in public expenditure.

Table 1 indicates that policies on cold homes which reduce mental illness are more likely to fall into this category—for each case averted the gain in well-being plus GDP per pound of public expenditure saved is greater for common mental disorders than for all other morbidities. Although fiscal rate-of-return tests have appeared more attractive during the recent period of fiscal austerity, from a social point of view policies on cold homes and fuel poverty which reduce mental illness may need protection from such a test.

Existing knowledge in the area

Although there is substantial existing evidence implicating cold homes in a wide range of adverse health outcomes, knowledge of the cost which such outcomes impose on the individuals afflicted and on other members of society is very limited and fragmentary.

What this study adds

This study uses existing secondary data to provide an estimate of the monetized 1 year social cost of cold homes in the City of Sheffield. The estimate is based on a concept of social cost which is coherent and reasonably comprehensive, and which is relevant for the evaluation of public policy interventions. The estimating framework is readily transferable to any other English local authority area at a modest computational cost.

Limitations and areas for further research

There are several areas in which the results of this pilot feasibility study could be expanded on and improved by further research. Firstly, the estimates of NHS and Social Care unit costs—which are presented as plausible approximations only—would be made more precise by a detailed professional scrutiny, and also by the inclusion of an estimate of the unit NHS and Social Care cost of mental ill health co-morbidities.

Secondly, the estimates of total care costs would be significantly improved by the inclusion of estimates of the unit cost of informal care for all cold-home-related morbidities, especially so for mental illness. And third, at the level of analytical structure rather than empirical detail, modelling the evolution of harms to health due to cold homes over a sequence of future time periods would remove the limitation in the present estimates of the single year time frame. In such a projection, the translation of case numbers of morbidity and mortality into life years lost is less straightforward than in the single year case due to the persistence and probable increasing severity over time of existing cases of morbidity; the emergence of new cases of morbidity and the eventual termination of cases of morbidity by death. The advantage of modelling this evolution under a no change policy assumption would be to allow the beneficial impact of any new policy intervention to be estimated from a sequence of life years saved over the projected length of life of the intervention.

Acknowledgements

I am grateful to the following for comments and advice: Chris Bentley, Jan Gilbertson, Geoffrey Green, Catherine Homer, Steven Martin, Paul Redgrave and Angela Tod. I am also grateful for the comments and suggestions of two anonymous reviewers.

Funding

The research emanates from the Abacus Programme in the Sheffield Hallam University Centre for Health and Social Care Research. The Programme was funded by the National Institute for Health Research Collaboration for Leaders in Applied Health Research and Care for South Yorkshire (NIHR CLAHRC SY) a pilot study 2008–2013. The views and opinions expressed are those of the author and not necessarily those of the NHS, the NIHR or the Department of Health. Further details about CLAHRCs in South Yorkshire 2014–18 can be found at www.clahrc-yh.nihr.ac.uk.

References

- 1 NHS Cold Weather Plan for England: Making the Case https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/216641/dh_130925.pdf (January 2014, date last accessed).
- 2 Fenwick J, Macdonald C, Thompson H. Economic analysis of health impacts of housing improvement: a systematic review. *J Epidemiol Community Health* 2013;**67**(10):835–45.
- 3 Hills J. *Fuel Poverty and its Measurement Interim Report of the Fuel Poverty Review*: CASE Report 69 2011. London, UK: Department of Energy and Climate Change, 2011.
- 4 Marmot Review Team. *The Health Impacts of Cold Homes and Fuel Poverty*. London, UK: Friends of the Earth, 2011.
- 5 Liddell C, Guiney C. *Improving Domestic Energy Efficiency: Frameworks for Understanding the Impacts on Mental Health*. University of Ulster, 2014 <http://eprints.ulster.ac.uk> (June 2014, date last accessed).
- 6 Layard R, Clark D, Knapp M *et al*. Cost benefit analysis of psychological therapy. *Natl Inst Econ Rev* 2007;**202**:90–8.
- 7 Gilbertson J, Green G, Ormandy D. *Decent Homes Better Health: Sheffield Decent Homes Health Impact Assessment*. Centre for Regional Social and Economic Research, Sheffield Hallam University 2006.
- 8 Housing Health and Safety Rating System: Operating Guidance. Office of the Deputy Prime Minister, London, UK: February 2006.
- 9 Harris J, Hall J, Meltzer H *et al*. *Health, Mental Health and Housing Conditions in England*. London, UK: National Centre for Social Research, 2010.
- 10 West Midlands Public Health. Observatory Excess Deaths in England. <http://www.wmpho.org.uk/excesswinterdeathsinenglandatas/default.aspx> (January 2014, date last accessed).
- 11 Department of Energy and Climate Change. Sub Regional Fuel Poverty data 2011: Low Income High Costs Indicator. <https://www.gov.uk/government/publications/2011-sub-regional-fuel-poverty-data-low-income-high-costs-indicator> (accessed January 2014, date last accessed).
- 12 World Health Organization. Global Burden of Disease 2004 Update: Disability Weights for Diseases and Conditions. http://www.who.int/healthinfo/global_burden_of_disease/GBD2004_DisabilityWeights.pdf (January 2014, date last accessed).
- 13 McCrone P, Dahanasir S, Patel A *et al*. *Paying the Price: the Cost of Mental Health Care in England to 2026*. London, UK: The Kings Fund, 2008.
- 14 Naylor C, Parsonage M, McDaid D *et al*. *Long Term Conditions and Mental Health: the Cost of Co-Morbidities*. London: The Kings Fund, 2012.
- 15 Office of National Statistics. 2011 Population Census for England and Wales. <http://www.ons.gov.uk/ons/guide-method/census/2011/index.html> (January 2014, date last accessed).
- 16 London School of Economics Centre for Economic Performance Mental Health Policy Group. *The Depression Report: a New Deal for Depression and Anxiety Disorders*. London School of Economics, 2006.
- 17 EuroVaq. European Value of a Quality Adjusted Life Year, 2010. <http://research.ncl.ac.uk/eurovaq/> (January 2014, date last accessed).
- 18 Wolff J, Orr S. Cross Sector Weighting and Valuing of QALYs and VPFs. Centre for Philosophy Justice and Health, University College London, 2009.
- 19 Claxton K, Martin S, Soares M *et al*. Methods for the Investigation of the Nice Cost Threshold. Centre for Health Economics, Research Paper 81, University of York, 2013.
- 20 NHS 2011–2012 Programme Budgeting PCT Benchmarking Tool. <http://www.networks.nhs.uk/nhs-networks/health-investment-network/news/2011-12-programme-budgeting-data-now-available> (December 2013, date last accessed).
- 21 NHS Quality and Outcomes Framework 2011–2012 PCT Level, <http://www.hscic.gov.uk/catalogue/PUB08722> (December 2013, date last accessed).

- 22 NHS National Schedule for Reference Costs 2011–2012 All NHS Trusts And NHS Foundation Trusts HRG Data Own Costs, code HB14C. <https://www.gov.uk/government/publications/nhs-reference-costs-financial-year-2011-to-2012> (December 2013, date last accessed).
- 23 Department of Communities and Local Government. Research into the Financial Benefits of the Supporting People Programme, 2009. https://www.gov.uk/uploads/system/uploads/attachment_data/file/16136/1274439.pdf (December 2013, date last accessed).

Appendix: Sources and methods in detail

Section 1: Estimating deaths

Excess winter deaths are those recorded in the four winter months December–March minus the average of recorded deaths in the two non-winter four month periods (August–November and April–July). Calculations by the Marmot Review Team⁴ indicate that only 21.5% of national excess winter deaths are attributable to houses being cold rather than to other winter conditions.

Section 2: Estimating cases of cardio-vascular disease, respiratory illness and falls in the home

See Housing Health and Safety Rating System⁸ for a brief description of the HHSRS and Annex D paragraphs 1.04, 2.20, 20.02 and 21.04 for the HHSRS likelihood coefficients for the hazards of excess cold, damp and mould and falls in the home. Each coefficient measures the probability that an occupier of a dwelling will suffer a harm to health caused by a specified hazard over a period of 12 months. The coefficients relate to harms to health that fall across four categories of severity and which are deemed to need medical care. It is an implication of the construction of HHSRS that the number of persons per dwelling affected by any hazard to health is set to one.

The HHSRS likelihood coefficients are applied to the number of local households in which at least one member the relevant HHSRS defined vulnerable age group resides. Local household numbers by residents' age are sourced from Office of National Statistics.¹⁵ In the HHSRS those aged 65 or above define the group vulnerable to the hazard of excess cold; those aged 16 and below approximately define the group vulnerable to the hazard damp and mould—which comprises those aged 14 and below; and those aged 65 and above approximately define the group vulnerable to the hazards of falls on the level and stair falls—which comprises those aged 60 and above.

Section 3: Estimating cases of common mental disorders

The data in Harris *et al.*⁹ table 7.1 can be used to identify the proportion of the adult population who report having used

less fuel than necessary to heat the home due to cost worries over the past 12 months, and the proportion of this sub group who suffer from a common mental disorder. This latter proportion is adjusted by subtracting the lesser rate of common mental disorders among those who do not use less fuel due to cost worries, in order to isolate the effect attributable to worries about fuel costs rather than to other factors. The adjusted proportion is applied to the number of local households rather than the number of local adults in order to ensure consistency with the estimates of cases derived from the HHSRS.

An alternative method would be to use the data in table 7.1 on the prevalence of common mental disorders together with that on the proportion who report being unable to keep the home warm in winter—which is lower than the proportion using less fuel than necessary due to cost worries. But the authors report that the reported cold-in-winter proportion is subject to recall effects—varying according to the month in which the survey question is asked. The reported '(proportion) . . . would have been higher had interviewing taken place only in the winter'.⁹

The London School of Economics Centre for Economic Performance Mental Health Policy Group¹⁶ reports that only 25% of those suffering mental illness receive treatment. This adjustment also ensures that estimated cases of mental illness are computed on the same basis as those of other morbidities derived via the HHSRS likelihood coefficients.

Section 4: Estimating unit social costs: loss of well-being

A value of £40 000 for a disability free year of life is within the range of willingness-to-pay values for the UK proposed in EuroVaq¹⁷ Appendix table 2.3, and is also within the range used within 12 UK government departments. See Wolff *et al.*¹⁸

A counterfactual is assumed under which those suffering harm to health because of cold homes would otherwise enjoy the average level of health of the general population in the age group to which they belong, rather than an illness and disability free level of health—which is a commonly assumed counterfactual. Claxton *et al.*¹⁹ figure 4.1 report health-related quality of life scores from the Health Survey for England by age and gender which show that for both males and females aged between 65 and 70 this score is ~ 80% of the maximum score, ~ 95% of the maximum for those aged 16 years and below and ~ 88% of the maximum for those of the mean age of all UK adults (47.5 years in 2011). Thus the adjusted money value of the 1 year losses of well-being are $£40\,000 \times 1 \times 0.80 = £32\,000$ (for death), $£40\,000 \times 0.4 \times 0.8 = £12\,800$

(for cardio-vascular disease), $\pounds 40\,000 \times 0.3 \times 0.8 = \pounds 9\,600$ (for falls in the home), $\pounds 40\,000 \times 0.25 \times 0.95 = \pounds 9\,500$ (for respiratory disease) and $\pounds 40\,000 \times 0.2 \times 0.88 = \pounds 7\,040$ (for common mental disorders).

Section 5: Estimating unit social costs: NHS and Social Care expenditures

The NHS and Social Care costs per case specified below are averages across all classes of severity.

The per case NHS and Social Care cost for cardio-vascular disease is total expenditure in category 10 ‘problems of circulation’ for Sheffield PCT in NHS Programme Budgeting Tool²⁰ divided by cases of ‘coronary heart disease’ for Sheffield PCT recorded in NHS Quality and Outcomes Framework.²¹

The per case NHS and Social Care cost for respiratory disease is total expenditure in category 11 ‘respiratory illness’ for Sheffield PCT recorded in NHS²⁰ divided by cases of ‘chronic pulmonary obstructive disease’ for Sheffield PCT recorded in NHS Quality and Outcomes Framework.²¹

The per case cost for falls in the home for NHS Primary, Secondary and Tertiary Care for is that shown for Sheffield PCT under code HB14C in NHS National Schedule for Reference Costs²² and for non-NHS Social care is derived via an inflation adjustment on 2007 data for the Sheffield Local Authority in the Capgemini Supporting People Cost Model

for the ‘Older Floating and Other’ client group—an older age group receiving housing-related social care services not resident in any form of sheltered accommodation. See Department of Communities and Local Government.²³

The per case NHS and Social Care cost for common mental disorders is total expenditure in category 5× ‘other mental health disorders’ for Sheffield PCT recorded in NHS Programme Budgeting Tool²⁰ divided by cases of ‘depression 18 years +’ for Sheffield PCT recorded in NHS Quality Outcomes Framework.²¹

Section 6: Estimating unit social costs—loss of GDP

The data in Layard *et al.*⁶ tables 2, 3 and 4 indicate that taking into account other barriers to continuous employment a person suffering ‘general anxiety’ rather than enjoying good health can expect to lose 0.96 months of work per year due to unemployment or 0.25 months of work per year due to being absent from work. Appropriately weighted these losses convert to an average of 0.7 months per year, which in turn converts into an annual GDP loss per of $\pounds 682$ per case of general anxiety assuming that the person would have been employed at the 2011–12 adult UK National Minimum Wage Rate. This figure applies only to those suffering cold-home-related Common Mental Disorders who are of working age.