

# The full cost of poor housing

Mike Roys, Simon Nicol, Helen Garrett and Susie Margoles





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# Foreword

Public Health England welcomes this publication by BRE as a significant contribution to the understanding of the connections between housing and health and wider costs to society of poor housing.

We know that good housing is essential to health and wellbeing. It also plays a crucial role in supporting other determinants of good health such as educational attainment, employment prospects and social interaction.

With local authorities now responsible for public health and with the establishment of Local Health and Wellbeing Boards, we have a great opportunity to address issues like poor housing and to build more integrated approaches to addressing this. Initiatives like the NHS Healthy New Towns and new powers being devolved to local areas across England provide further opportunities to seek improvements in health and wellbeing and reductions in need for costly health care. This report from BRE illustrates well the wider costs to society arising from poor housing.

There is a strong case to be made for prevention through core housing improvements. This report adds to our wider understanding of the close relationship between poor housing, demands on NHS care and other social costs. It provides much-needed evidence that can be used by local government and the NHS. It is very relevant to the preparation of Joint Health and Wellbeing Strategies and reinforces the need for strong cross-agency work, with an integrated housing dimension, if we are to realise the returns on investment that can be made across sectors.

We hope that this report will stimulate wider discussions and local action around health and wellbeing, healthcare costs, prevention and the role that good housing plays in underpinning the health and wellbeing of the people of England.



**Professor Kevin Fenton**  
**National Director of Health and Wellbeing**  
**Public Health England**

# 1 Executive summary

This report presents the findings from a joint BRE Trust–DCLG funded project\* to update and improve estimates of the cost to the NHS of living in poor housing. The original report, *The real cost of poor housing*<sup>[1]</sup>, published in 2010, contains data that is now over 10 years old<sup>[2,3]</sup>. The data sources needed updating to reflect new knowledge and information that have since become available.

The original report introduced a model to calculate the costs and benefits associated with the main building-related hazards found in homes in England. This report improves on the original model by: using the latest published data on health and safety hazards in the home from the 2011 English Housing Survey (EHS)<sup>[4]†</sup>; re-calculating the health benefits associated with energy efficiency improvements; and using updated (2011) NHS treatment costs.

## The revised cost of poor housing

Using this revised NHS information, it is estimated that leaving vulnerable people living in the poorest 15% of England's housing is costing the NHS £1.4 billion each year in first-year treatment costs (Table 1). This risk is comparable to the burden to the NHS of other health hazards, such as smoking and alcohol consumption.

The new estimates suggest that, while the housing stock is getting better, the benefits of improvement have perhaps been understated in the past and that, as NHS costs appear to be racing ahead of inflation, it makes total sense to invest in poor housing now as a preventative measure to save costs (and unnecessary suffering) in the future. And, for the first time, an estimate has also been made for the benefit to the NHS in terms of quality-adjusted life years (QALYs).

## The revised cost to society

In all the previous BRE Trust *cost of poor housing* (COPH) reports<sup>[1, 5, 6, 7]</sup>, the calculation of the costs of a health outcome was based on the NHS treatment costs for up to one year of treatment following an accident or exposure to a hazard, since robust data are available to estimate these costs. These NHS costs were estimated to account for a maximum of 40% of the total cost to society.

In order to better estimate the cost to society of these hazards, a literature review of similar injury-based cost-to-society analyses was made and a new model was developed. Using this model, it is estimated that the cost to society (including medical costs, lost education and employment opportunities) of leaving England's poor housing unimproved is £18.6 billion. The annual NHS costs for the same homes are £1.4 billion, equating to 8% of the total cost to society.

## The cost of all sub-standard housing

The benefits side of the model has also been widened in this report to include NHS treatment costs for all sub-standard housing (not just homes with serious hazards). 'Sub-standard' in this report refers to any housing that has a hazard rating that is below the average for its age and type.

The majority of the cost (around 70%) is associated with Category 1 hazards (Table 2), but for a number of hazards the contribution from actionable hazards (worse than average but not Category 1) is greater than the contribution from Category 1 hazards. The estimate for the overall cost of sub-standard housing is £2 billion.

There are a number of hazards that are traditionally concerns for environmental health officers. These include: domestic hygiene, pests and refuse; personal hygiene, sanitation and drainage; crowding and space; food safety; electrical hazards; structural collapse and failing elements; lighting; and water supply for domestic purposes. All of these hazards recorded a significant increase in costs to the NHS when actionable hazards were included.

\* Project 197-14-RM: Updating and expanding the BRE Trust *cost of poor housing* models.

† The first national housing survey, the English House Condition Survey (EHCS), was undertaken in 1967. In 2008, the EHCS merged with the Survey of English Housing to become the English Housing Survey (EHS).

## 2 Introduction

There is a long-established, recognised relationship between poor housing and poor health. In Victorian England, diseases such as tuberculosis, cholera and typhus were known to be associated with unsanitary, cold, damp and overcrowded housing and this led to various public health and housing acts designed to improve housing conditions. The problems of disease associated with 'slum' living have now largely been eradicated in developed countries like England, but there remains a significant number of health and safety hazards in the home. This is compounded by the fact that England has one of the oldest housing stocks in the developed world and one of the lowest rates of housing replacement.

Many studies have investigated the relationship between housing and health but, because of the number of intervening variables, it has been difficult to demonstrate clear and measurable cause and effect relationships. Nevertheless, there is a large and growing body of evidence linking systematically adverse health effects with poor housing conditions. These conditions include dampness, the effects of living in a cold home, household accidents, noise, insecurity, overcrowding and fire safety.

BRE has been involved in the development of the Housing Health and Safety Rating System (HHSRS) since its inception; from 2006 it became the minimum standard of housing in England. The HHSRS produces scores for dwellings based on the statistical risk of 29 health and safety hazards, particularly focusing on the risk to vulnerable people.

Through the English House Condition Survey (EHCS), and its successor the English Housing Survey (EHS), which now measures the presence of HHSRS hazards in the home, we are able to quantify the prevalence of poor housing and also the cost of remedial action. However, until this research project we have not had the ability to link this information to medical and social costs to estimate the 'cost to society' of poor housing

conditions. This report updates all the figures used in the 2010 publications<sup>[1, 9]</sup>, allowing comparisons to be made using 2011 prices. It also introduces for the first time a comparison of hazards in terms of health impacts to QALYs.

Our previous reports suggested that the annual cost to the NHS of treating HHSRS Category 1 hazards accounted for a maximum of 40% of the total cost to society. However, this was based on the limited information that was available at the time, and it was thought that improvements to the assessment could be made to improve this estimate. For minor injuries the cost to society may have been overestimated where the cost to the NHS might be most, if not all, of the cost to society; whereas for more serious injuries, it is likely that this estimate seriously underestimated the true cost to society.

In order to establish a better estimate of the total cost to society of these hazards, a literature review of similar cost-benefit analyses has been carried out. From the review, the best available numbers are used to weight the COPH model, and hence to determine the overall cost to society of poor housing. This revised number is used to determine the proportion of the cost represented by the cost to the NHS at each of the harm levels and overall.

The final aspect considered in this report is the cost of treatment burden to the NHS associated with all sub-standard housing. The risk of harm is likely to be smaller for these dwellings than for housing with Category 1 hazards present, and the cost of remedial action to bring them up to the desired standard, in many cases, is likely to be prohibitive. However, an understanding of this extra burden on the NHS may highlight the contribution less significant hazards play in affecting health and safety in dwellings across the housing stock. It also helps to justify the case for building housing to a better standard in the first place.