*How do we calculate the costs of improving health through housing interventions?* ***Viv Mason*** *and* ***Kevin White*** *report on a new formula*

# THE PRICE OF HEALTH

We all recognise that proactive housing interventions can benefit public health but those benefits need to be quantified if this approach is to gain the recognition it deserves. Is it easier to explain to lay people how the housing health and safety rating system (HHSRS) works, or show them some costs explained in terms of health?

The World Health Organisation promotes Health Impact Assessments as a tool to assess the effect on health of any programme or policy. And public bodies undertake financial scrutiny to ensure value for money. Combining the two makes good sense.

With the advent of local strategic partnerships and local area agreements, looking across different public sectors and joining up strategy is now easier. Or is it?

The Building Research Establishment (BRE), which developed the HHSRS cost calculator for the CIEH, has produced a more sophisticated tool to predict the real cost to the NHS of Category 1 hazards.

Further calculations can give a cost benefit over a number of years for mitigating the hazards, to help calculate which are worth removing. Is it better to spend tight resources on putting up a stair rail, window restraints or fire doors? Alternatively, if we serve 10 improvement notices, how much money could we get from the private sector to help alleviate health costs?

The technique can be used to predict the likely health benefit and retrospectively, to assess the effect in monetary terms (*see box*).

To predict the cost and benefit of proposed interventions, evidence of the number of Category 1 hazards is required. We can model it in the following main groups:

- Excess cold
- Falls on level surfaces etc
- Falling on stairs etc
- Falling between levels
- Fire
- Flames, hot surfaces etc
- Entry by intruders

Background statistics have been developed from the *English house condition survey* reporting of HHSRS likelihood and harm outcome scores. The health costs are taken from the *The real cost of poor housing*, published this month by BRE Trust.

For the retrospective health impact assessment, the average cost of carrying out mitigation work for each hazard is needed. The post-assessment stage can be modelled to bring dwellings up to the average with the exception of excess cold, where a higher than average likelihood is given following proposed energy efficiency works. The saving to the NHS can then be estimated.

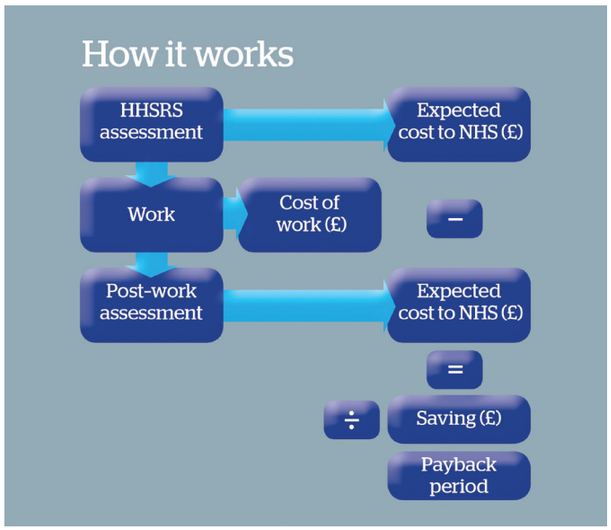
Retrospective calculations can be carried out for all HHSRS hazards, including Category 2 hazards, where assessments of hazards before and after the mitigation work plus the cost of the work are available.

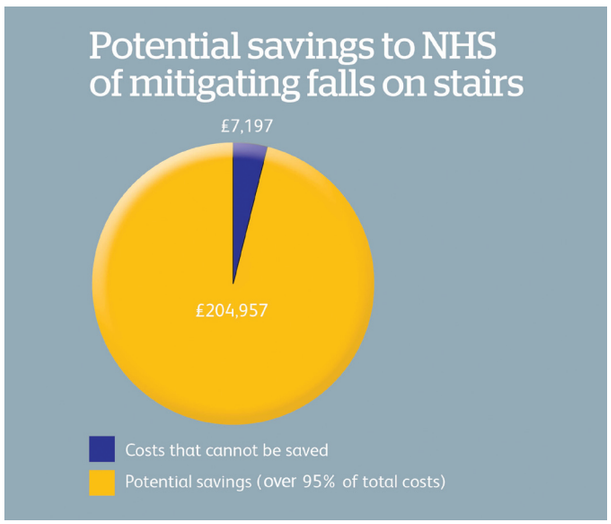
Additional calculations can give detailed cost benefit predictions for carrying out work to the cheapest 50 or 20 per cent of dwellings, mirroring practical deliverables.

The scenario below shows the cost of mitigating all Category 1 hazards of excess cold in owner-occupied dwellings. The table models work carried out over a three-, five- and 10-year period, plus the costs and payback period of all dwellings and the cheapest 50 and 20 per cent.

The use of this technique is exciting as, if good evidence is available, it should show not just the health value of any renovation grants or loans but also the amount of private sector spending brought into the area. **E**

**Contact: Viv at masonv@bre.co.uk**




**Viv Mason** is a chartered EHP. She joined the housing team at the Building Research Establishment three years ago, continuing to advise local authorities, develop private sector housing methodology and help train surveyors. Her particular expertise is advice on HHSRS audits and linking health with housing.

**Kevin White** has worked on housing research since 1996, analysing and modelling data from local and national housing surveys. He is responsible for developing models of housing stock conditions at local level and estimating the costs of remedial work required to dwellings from the English and Northern Ireland House Condition Surveys.

**The BRE Trust** (formerly the Foundation for the Built Environment) is a charitable company which aims through research and education, to advance knowledge, innovation and communication in all matters concerning the built environment for public benefit.

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**The cost of mitigating excess cold in owner-occupied homes**

| Changing values | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Time period in years | 3 | 5 | 10 | 3 | 5 | 10 | 3 | 5 | 10 |
| Proportion to repair | All | All | All | Cheapest 50% | Cheapest 50% | Cheapest 50% | Cheapest 50% | Cheapest 50% | Cheapest 50% |
| Non changing factors | | | | | | | | | |
| Costs: Local | | | | | | | | | |
| Additional costs: None | | | | | | | | | |
| **Results** | | | | | | | | | |
| Annual repair cost | £978,653 | £587,192 | £293,596 | £117,166 | £70,299 | £35,150 | £21,878 | £13,127 | £6,563 |
| Payback period | 14 | 14 | 14 | 4 | 4 | 4 | 2 | 2 | 2 |
| Cumulative payback period | 15 | 16 | 19 | 5 | 6 | 4 | 3 | 3 | 3 |