

# Measuring the Housing Health and Safety Rating System through the English House Condition Survey

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## Summary

The Housing Health and Safety Rating System (HHSRS) has been designed as a tool to measure the health and safety of individual units of accommodation. However, it is also potentially a useful benchmark indicator for the condition of national, regional or local housing stocks, and a strategic planning tool – to quantify the risks in the housing stock and to prioritise action. In the long term it is intended to replace the ‘fitness for habitation’ as the key indicator of house condition in the English ‘Decent Home’ standard.

The 2001 English House Condition Survey has attempted to measure the impact of the HHSRS on the English housing stock. The survey form was designed to measure five hazards directly: falls on stairs; falls on the level; falls between levels; hot surfaces; fire. In addition, many of the remaining hazards could be modelled from other information on the survey form, including the risk from cold, dampness, and noise.

The HHSRS is still in its piloting stage, but the objectives of the survey were to see: if it could be an applicable measure to be used in large scale house condition surveys; whether it could be completed using a paper form (the full system being applied through a hand held computer); and whether it could be briefed and applied consistently.

Many of the EHCS surveyors were sceptical of the HHSRS judgements that they were making in the field. However an ‘end of survey experiment’ showed that, while there was variability in their judgements when faced with the same houses, their markings were at least as reliable as those for ‘fitness for habitation’ – the house condition indicator that the HHSRS is designed to replace, and that when there were serious health and safety problems, surveyors were able to identify these even if they scored them slightly differently.

Provisional survey results show that the national scores for each of the 5 directly measured hazards are broadly similar to those which would be expected, based on the known statistics relating to health and safety in the home - only this time we have the information for individual homes. We know who lives in the homes and how vulnerable they are. We can also estimate what it would take and how much it would cost to fix the problems, and whether the owners can afford to do the work.

With better informative statistics, more training, and greater familiarity and confidence in use, it is likely that the HHSRS will prove to be a useful tool for monitoring the health and safety of the housing stock.

## **The English House Condition Survey (EHCS)**

The EHCS has traditionally been carried out by the English government every 5 years (since 1971) to monitor the housing stock. The last large-scale survey was undertaken in 2001. While it is a sample survey, results are weighted to produce national estimates. The survey has now moved on to a continuous basis, as the demand for up-to-date information on the performance of the housing against government targets has grown, but we will concentrate on the 2001 EHCS, as it is this survey where we have measured the HHSRS and for which the results are available.

The 2001 EHCS is, in fact, not one survey but a number of linked surveys:

- First is a household interview (undertaken by trained interviewer), which is carried out on the full 20,000 sample and collects information on household composition, income, expenditure on the home, satisfaction, health etc.
- This is followed by a physical inspection of the property to determine its type, age, condition, energy efficiency and so on. It is the trained surveyors who undertake the health and safety assessments.
- Finally, there are a series of follow-up surveys with sub-samples to collect information on property values, landlord expenditure and plans, and energy consumption.

The survey databases are linked to provide a large, flexible data source which can be used for a variety of reporting and modelling purposes, including information on:

- The age, type, tenure, condition, location of dwelling homes;
- The age and composition of households, their income and resources, expenditure on the home, health, satisfaction etc.
- The estimated cost of undertaking repairs and improvements.

### **Measuring the HHSRS through the 2001 EHCS**

The 2001 EHCS is the first occasion where we have been able to measure the impact of the Housing Health and Safety Rating System (HHSRS) at national level. We did not attempt to measure all of the hazards (discussed in Rachel Court's paper) because this would have been too time consuming to brief and implement through this time-limited survey. Instead, we measured five of the hazards directly, and have modelled the remainder using other information collected through the EHCS.

The five hazards we measured directly were:

- Falls on stairs
- Falls on the level
- Falls between levels
- Fire
- Hot surfaces and materials.

Prior to the survey, it was estimated that these five hazards (plus cold homes which we will measure directly from other data collected by the surveyors) would account for 80% of the most serious health and safety risks to the housing stock.

## **Training the surveyors to complete the HHSRS**

The EHCS surveyors (200 of them, in 10 groups of 20) spent a full day being briefed on the HHSRS part of the survey form:

- David Ormandy of Warwick University gave a general overview of how the system worked and how the five hazards should be assessed, using examples.
- Simon Nicol explained how this should be completed on the survey form.
- The surveyors then undertook fieldwork at three homes to complete assessments against the five hazards.
- Then at an evening debriefing, the surveyors were given feedback on the scores that they had produced, and how these compared with each other and the model answers.

## **The process**

The surveyors followed the HHSRS process outlined in Rachel Court's presentation, only the assessments were recorded on a paper form rather than the computer based system that is used for comprehensive HHSRS assessments.

- First they were to determine whether there was a significant hazard in the home, under any of the five categories.
- If there was, they were to say for each hazard what the likelihood was of an incident occurring over the next year (in terms of 1 in 100 etc).
- Then they have to say what the outcome would be (in terms of severity of injury) if an incident did occur within the next year.

The process is best explained with reference to an example.

**Figure 1** shows some photographs of the back yard of a house (in Sheffield). Significant risks are identified under the categories: falls on stairs; falls on the level; and falls between levels. There is also a fire risk identified in the kitchen, as the external means of escape is blocked by a fridge.

**Figure 2** shows the completed page of the EHCS survey form for this example house. The surveyor determines that the likelihood of a fall occurring on the slippery, cluttered steps over the next year is perhaps ten times worse than average (1 in 32), and if a fall did occur the outcome would also be worse than average because of the length of the drop and the unforgiving surfaces. The combination of a likelihood of 1 in 32 and the increased risk of a serious injury produces an overall Band C (or actionable) score. The score is generated automatically following data entry, but the surveyor has a look-up table in which he can use as a field check.

Actionable problems are also identified under the headings 'falls on the level' and 'falls between levels'.

In this case, while the risks are significant, the problems would not take much to sort out. The back yard needs tidying up and the paving needs to be re-laid. Guard rails need to be fixed to the steps and a barrier needs to be installed to protect the step well at the bottom of the garden. The fridge needs re-siting so that the back door is accessible.

### **Surveyor variability**

Following their initial briefing, many surveyors were sceptical of the HHSRS judgements that they were making. However by the time they had finished their allocations of 100 surveys most had gained confidence. An 'end of survey experiment' (in which 20 surveyors undertook independent assessments of the same 12 houses with health and safety problems) showed that their markings were at least as good as those for 'fitness for habitation' – the house condition indicator that the HHSRS is designed to replace, and that when there were serious health and safety problems surveyors were able to identify these even if they scored them slightly differently. The experiment demonstrated that some judgements were easier to make than others – most notably, a single visible risk (such as a dangerous staircase) was always easier to score than a cumulative risk, (such as fire safety) where many factors had to be taken into consideration.

### **Survey results**

The results of the assessment against the five measured hazards from the 2001 EHCS are presented in **Figure 3**.

Of the hazards, falls on stairs is identified as the greatest problem. Some 640,000 homes (3% of the housing stock) have stairs or steps which score above the 'actionable' level (Class A,B or C risk) and are therefore considered unsafe. Of these, some 71,000 represent a Class A risk – and are quite clearly accidents waiting to happen.

The second greatest risk is from falls on the level (300,000, or 1.4%, dwellings above the actionable level), followed by falls between levels (150,000, or 0.7%), the risk from fire, and finally hot surfaces.

As mentioned, other risks have been modelled from other data collected on the survey form. It is estimated that dwellings containing any risk above the actionable level (A,B,C) are found in around 8% of the English housing stock – or 1.7 million homes (**Table 1**).

The incidence of the problems (both directly measured and modelled) is broadly comparable with that which was predicted from the available statistics on health and safety in the home.

**Table 1: Percentage of dwellings exceeding the EHCS threshold of 1,000 (Risk Bands A,B,C)**

<b>Hazard</b>	<b>2001 EHCS: % dwellings above threshold (i)</b>
<i>EHCS directly measured</i>	
Falls on stairs	3.0
Falls on level	1.4
Falls between levels	0.7
Fire	0.6
Hot surfaces	0.5
<i>EHCS Modelled</i>	
Excessive cold	1.5
Dampness	0.3
Carbon monoxide	0.2
Electrical problems	0.1
Radon	0.1
Noise	0.1
Lead	0.5
Other hazards	-
<b>Any hazards(ii)</b>	<b>7.8(iii)</b>

(i) Provisional estimates only, as analysis is ongoing

(ii) Some dwellings will have more than one significant hazard, so the proportion of dwellings containing a hazard will be less than the cumulated percentages above.

(iii) Likelihood to be a small undercount as ‘other hazards’ cannot be estimated from the EHCS.

## **How can we use the information?**

Accident and health statistics can tell us the frequency of problems relating to the different health hazards in the home. Surveys like the EHCS can show where potential accidents might occur. Further analysis of the 2001 EHCS data might show:

- In what type of housing different problems occur
- Whereabouts in the country these problems are found
- Who lives in these properties and how vulnerable they are
- What action would be required to make these homes more safe
- How much would this cost, and can the owners afford to do the work.
- If public intervention is required, what would be the priority for action

The above information could be used to benchmark the health and safety of the housing stock and to set targets for its future improvement.

## **Conclusions**

The survey results show that, while surveyors may lack confidence in their judgements at the individual dwelling level, the national scores for each of the 5 directly measured hazards are broadly similar to that which were expected, based on the known statistics relating to health and safety in the home. With better informative statistics, more training, and greater familiarity and confidence in use, it is likely that the HHSRS will prove to be a useful tool for monitoring the health and safety of the housing stock.

Once it is clear what the final format of the HHSRS will be, it may be possible to measure more of the HHSRS hazards directly. However, it may never be possible to measure the incidence of some of the hazards through surveys like the EHCS. Some hazards are so uncommon (or localised) in their 'actionable' form that it is unlikely that a significant number of cases could be identified, and there are some hazards which require specialist testing to confirm (eg radon), which could not be undertaken within a one hour superficial survey.



*The house is built on a slope. The back garden is terraced, but there are steep and slippery paths, and opportunities for trips and falls.*

*There is a stair well at the bottom of the garden, with no guard rail, and there are various obstructions – debris and broken and uneven paving – which could cause trips.*



## 23. Health and safety rating

Are any of the following 5 health and safety hazards significantly worse than those found in average dwellings of their age?  Y  N  
 If Yes, complete the relevant section(s) below. If more than one problem under any hazard, start with the worst.

Note: If one of the dark blue boxes is ringed a score of over 1,000 will be generated. For further permutations, see the tables on the facing page. Light grey boxes represent the average for the whole stock.

### Falls on stairs

Worse than average  Y  N **STONE STAIRS, NO HANDRAILS, VARIOUS OBSTRUCTIONS**

		Post 1980 Average Pre 1919												
Likelihood		1800	1000	560	320	180	100	56	32	18	<10			
		M	N	P	Q	R	S	T	U	W	X	Y	Z	
% Outcomes	Class 1 Extreme	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		
	Class 2 Severe	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100	Band C	
	Class 3 Serious	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		
	Class 4 Moderate													57.4

### Falls on the level

Worse than average  Y  N **SLIPPERY PATHS, STEEP SLOPES, TRIPS IN DANGEROUS PLACES**

		Post 1980 Average Pre 1919												
Likelihood		1000	560	320	180	100	56	32	18	<10				
		M	N	P	Q	R	S	T	U	W	X	Y	Z	
% Outcomes	Class 1 Extreme	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		
	Class 2 Severe	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100	Band C	
	Class 3 Serious	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		
	Class 4 Moderate													56.8

### Falls between levels

Worse than average  Y  N **UNGUARDED STEP WELL, HARD SURFACES AT BOTTOM, TRIPS AT TOP, LOOSE RAILINGS ON TERRACED PATIO**

		Average Pre 1919												
Likelihood		5600	3200	1800	1000	560	320	180	100	56	32	18	<10	
		M	N	P	Q	R	S	T	U	W	X	Y	Z	
% Outcomes	Class 1 Extreme	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		
	Class 2 Severe	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100	Band C	
	Class 3 Serious	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		
	Class 4 Moderate													58.3

### Fire

Worse than average  Y  N **INTERNAL DOOR TO KITCHEN REMOVED. BACK DOOR BLOCKED BY FRIDGE.**

		Post 1980 Average Pre 1919												
Likelihood		5600	3200	1800	1000	560	320	180	100	56	32	18	<10	
		M	N	P	Q	R	S	T	U	W	X	Y	Z	
% Outcomes	Class 1 Extreme	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		
	Class 2 Severe	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100	Band E	
	Class 3 Serious	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		
	Class 4 Moderate													66.3

### Hot surfaces

Worse than average  Y  N

		Average Pre 1919												
Likelihood		1000	560	320	180	100	56	32	18	<10				
		M	N	P	Q	R	S	T	U	W	X	Y	Z	
% Outcomes	Class 1 Extreme	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		
	Class 2 Severe	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		
	Class 3 Serious	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		
	Class 4 Moderate													73.8

### Justification

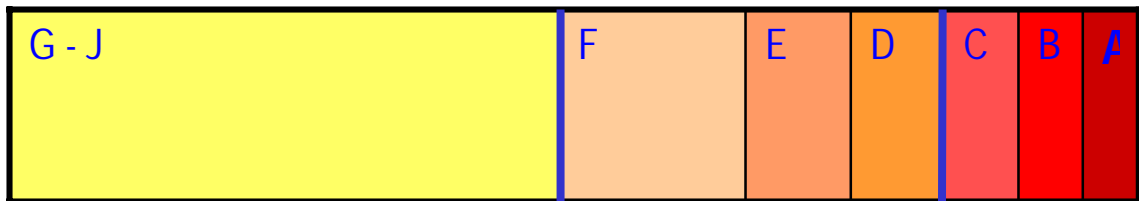
Describe any significant health and safety hazards identified above

Continue on 'Notes' page if space needed

**STEEP SLIPPERY PATHS; POOR PAVING & DEBRIS PROVIDING OPPORTUNITIES FOR TRIPPING; UNGUARDED DEEP STAIRWELL; LACK OF HANDRAILS; HARD, UNEVEN AND DEBRIS STREWN SURFACES FOR LANDING IN CASE OF FALL.**







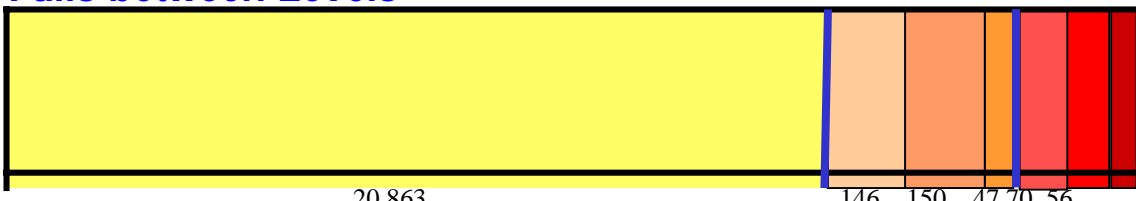
Thousand dwellings 71

### Falls on the Level



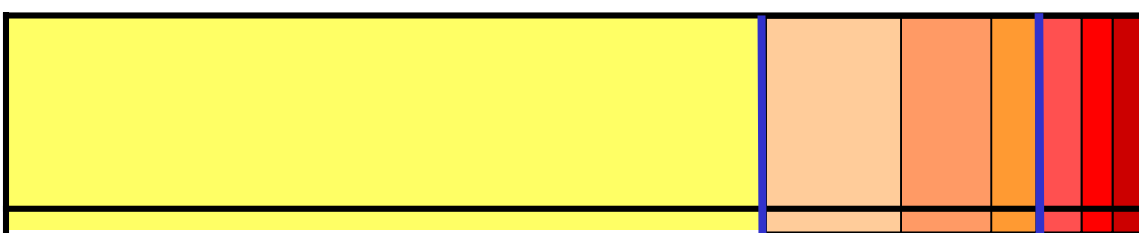
65 22

### Risk from Fire



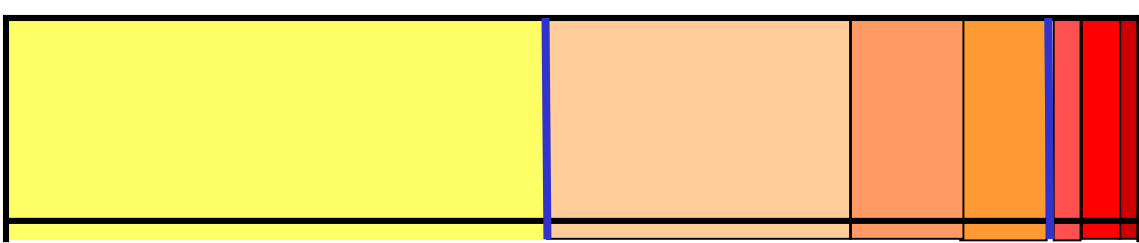
24

### Burns from Hot Surfaces



35

### Falls from Height



12