

Putting Health at the Centre of Housing Policies

Lessons Learned from England's
Housing Health & Safety Rating System

National Healthy Homes Conference,
Denver, June 2011

House and Home

- Having a house provides ~
 - shelter and refuge from the outside world
 - a physical and psychological envelope enabling individuals to become themselves
- The 'house' is the physical structure, and the 'home' is the economic, cultural and psychological structure created by the household
- Having a 'home' gives a feeling of social belonging, allows development of supportive and mutually helpful social bonds





Housing and Health

- Housing conditions influence health
- They can have a positive or negative, a direct or indirect impact on physical, social and mental health
- And, there is a growing bank of evidence on the potential harmful effect that unsatisfactory housing can have on the health of occupiers

Health in housing policies



WHO Europe

Fourth Ministerial
Conference on
Environment and Health

Budapest, Hungary
23-25 June 2004

Health in housing policies

"We are therefore committed ... to taking action to ensure that health and environmental dimensions are placed at the core of all housing policies (from housing construction and rehabilitation plans, programmes and policies to the use of adequate building materials) and that healthy conditions are ensured and maintained in the existing housing stock"

Health in housing policies

Health is now firmly embedded in housing policies in England

(But, perhaps it got there by the backdoor)

A bit of history

1919 ~ Ministry of Health proposed a standard of fitness for human habitation

1954 ~ First national statutory standard of fitness

1990 ~ 'Major' revision

2006 ~ Totally new approach adopted

1990 Fitness Standard

Matters to be consider ~

- (a) stability;
- (b) state of repair;
- (c) dampness;
- (d) provision for lighting, heating and ventilation;
- (e) supply of water;
- (f) facilities for the preparation and cooking of food (including a sink with hot and cold water);
- (g) a suitably located water closet;
- (h) a suitably located fixed bath (or shower) and wash hand basin, each with a supply of hot and cold water;
- (i) an effective system for the draining of foul, waste and surface water.

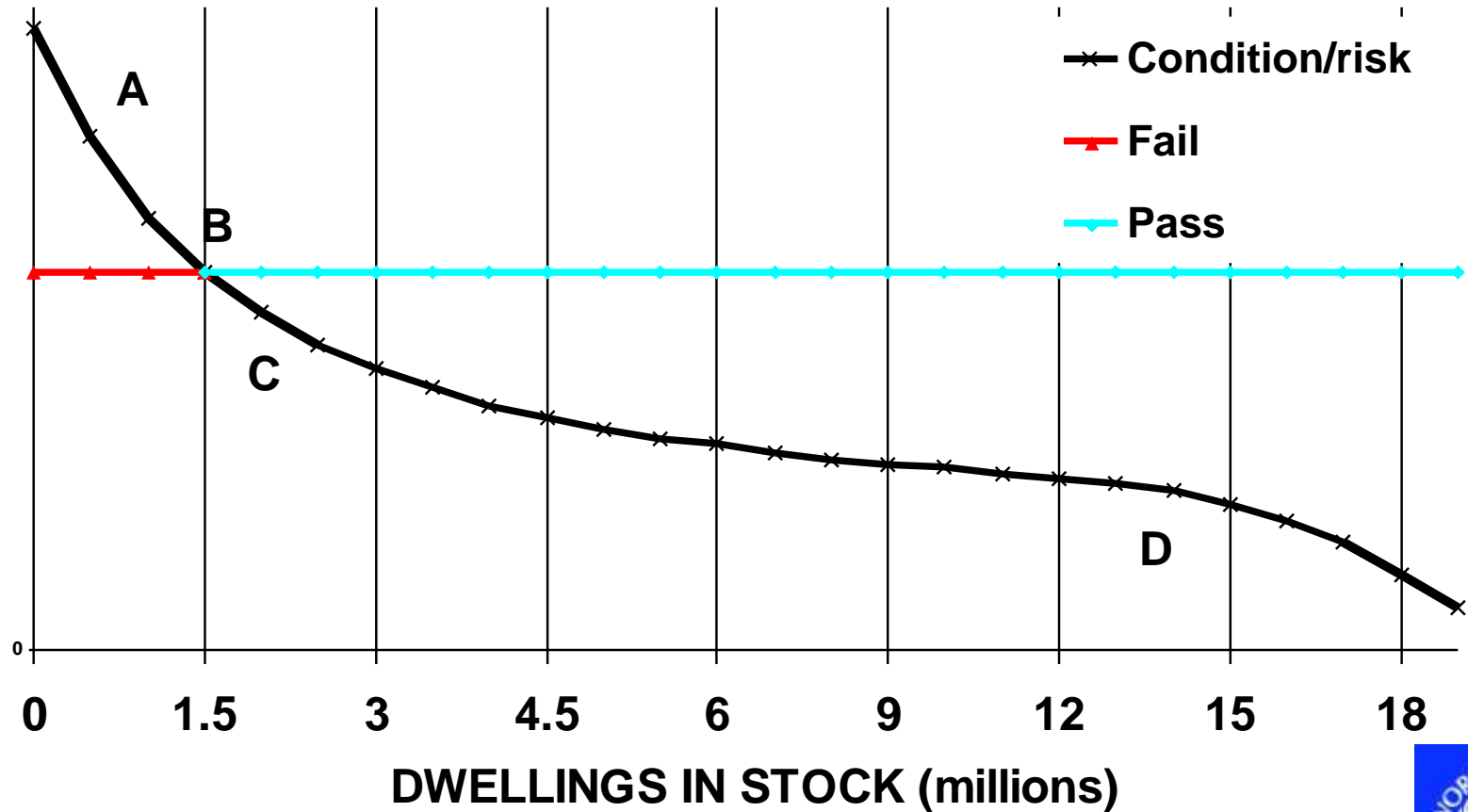
1990 Fitness Standard

- Focused on the building structure and facilities
- Problems included ~
 - Simple pass/fail model did not grade severity of condition
 - Severity of defects judged in terms of extent and cost of remedial works
 - Did not include all potential hazards

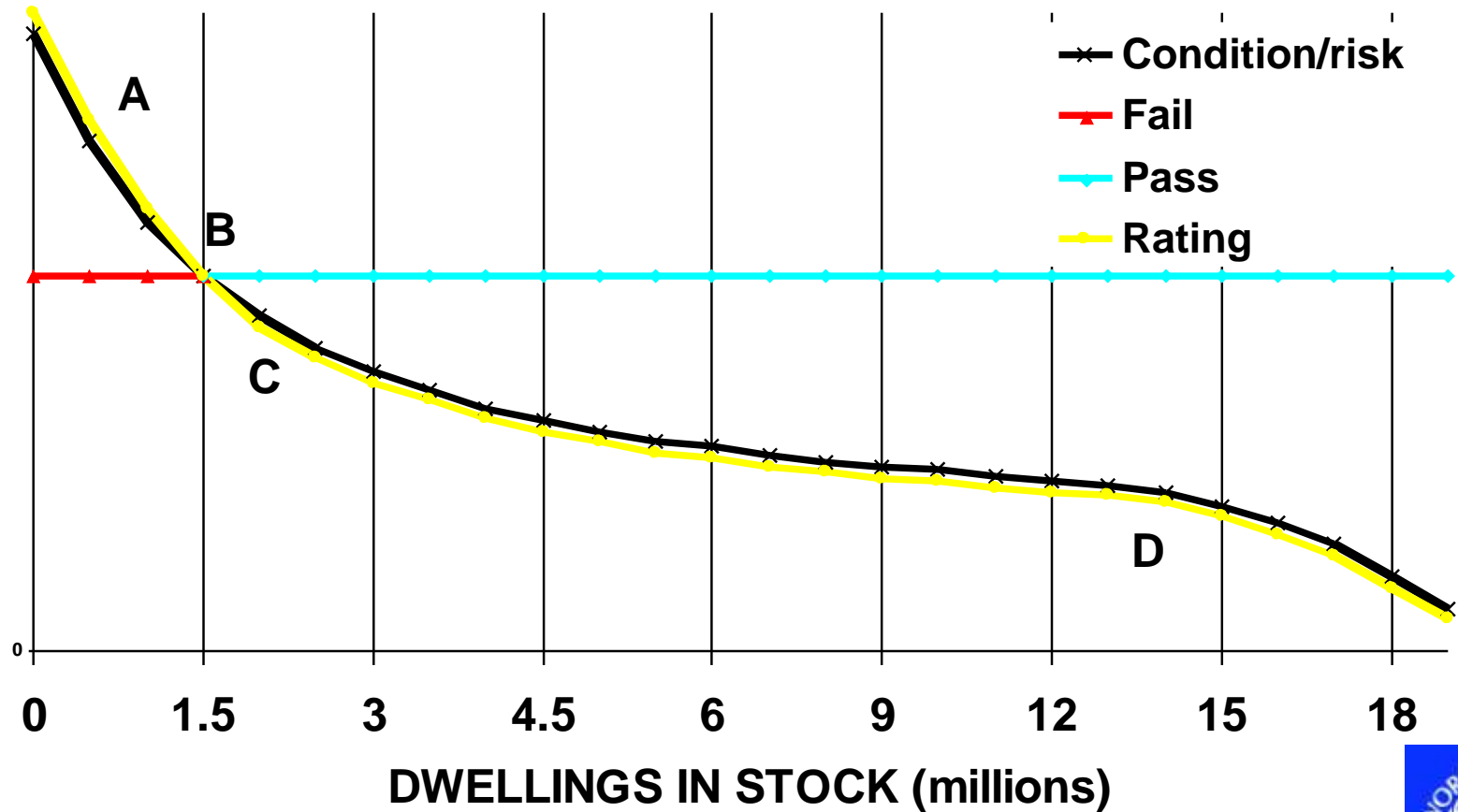
Research Findings

- Monitoring the Housing Fitness Standard (1993)
 - reported on call for *arrangement, thermal efficiency, noise, fire safety, radon, and environment* to be added
- Building regulation and health and Building regulation and safety (1995)
 - found that the **main health and safety hazards** in housing not included in Standard
 - used risk assessment to rank hazards

Probable Distribution of Unhealthy Housing in Stock



Probable Distribution of Unhealthy Housing in Stock



HHSRS - What is it?

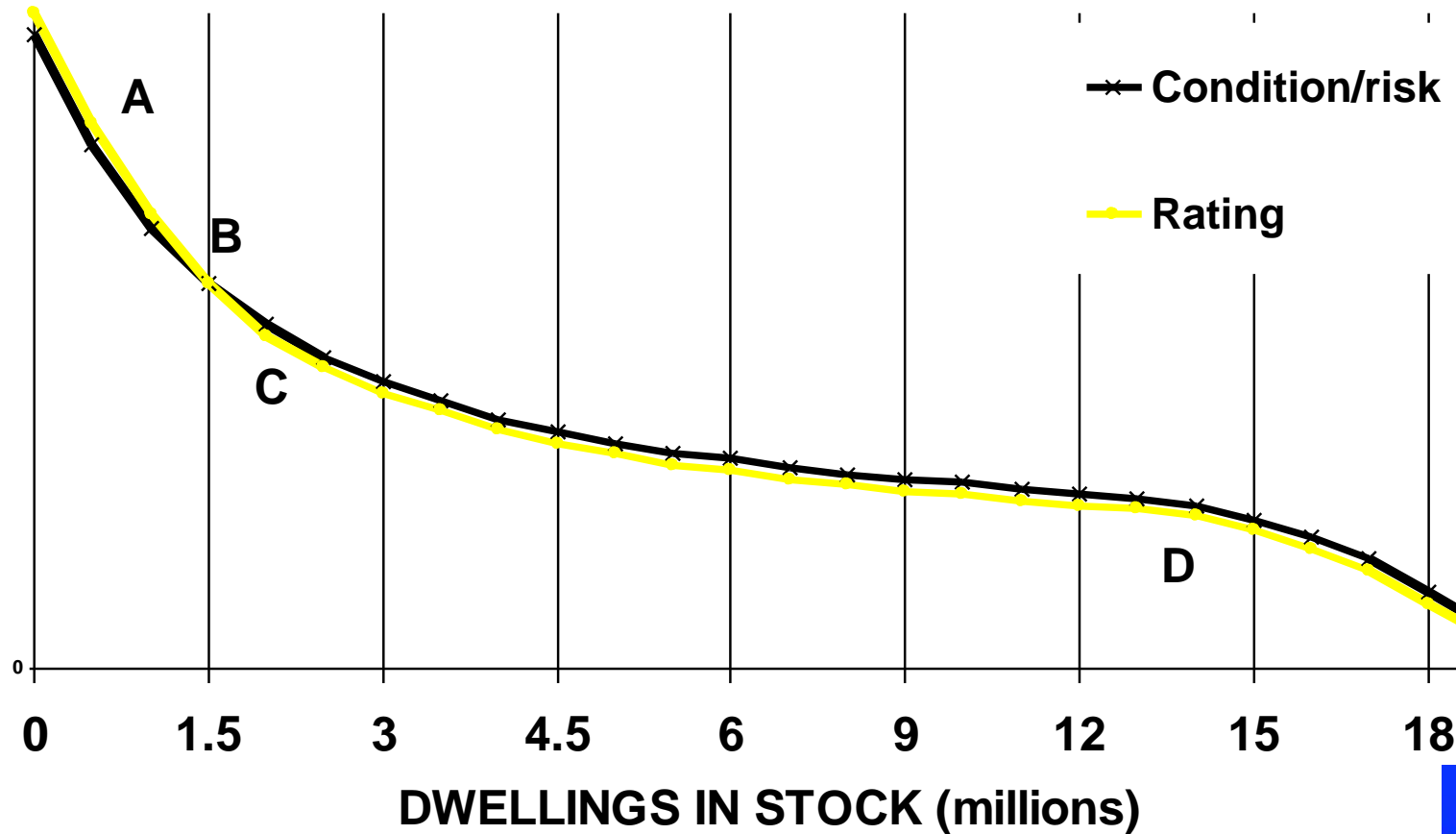
- A risk-based method for assessing housing conditions
- Developed and tested over ten years
- In April 2006, introduced as the statutory prescribed method for assessing houses in England and Wales

HHSRS

Unique in several ways ~

1. Does not set a 'standard'
2. Grades the severity of the threat to health and/or safety from the condition
3. Can include all potential housing hazards

Probable Distribution of Unhealthy Housing in Stock



HHSRS is ~

- Evidence based
- Focuses hazards (the threats to health)
ie, the effect, not the defect
- Allows the severity of hazards to be rated
- Is practical in its application

Principle behind HHSRS

A dwelling, including the structure and associated outbuildings and garden, yard and other amenity space, should provide a safe and healthy environment for the occupants and any visitors.

Benefits of a Rating System

- Can include all serious health and safety hazards
- Allows severity of hazards to be compared
- Can be applied to any type of dwelling, however constructed
- Can be updated as knowledge increases
- Provides a structured approach to assessment

HHSRS - The Evidence Base

To identify hazards in dwellings

- Extensive literature review
- Building regulation, health and safety (BRE 2001)

To compare threats and provide national benchmarks

- Home accident surveillance system 1997-1999
- English House Condition Survey 1996 Data
- British Crime Survey
- Home Office Fire Statistics
- ONS Mortality Data
- Hospital Episode Statistics
- ACORN, RESIDATA, Neighbourhood Statistics

Potential Housing Hazards

Arranged into four groups -

A - Physiological Requirements

B - Psychological Requirements

C - Protection Against Infection

D - Protection Against Accidents

Basic Principles of Healthful Housing*

Preliminary Report

COMMITTEE ON THE HYGIENE OF HOUSING

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*This Report has not been approved as a standard publication by the American Public Health Association's Committee on Research and Standards but has been endorsed by that Committee for release so that it may be made available for study.

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INTRODUCTORY STATEMENT

SHELTER is one of the three fundamental needs of human existence. No housing program can be sound unless the shelter it provides is healthful. It was this latter consideration which led the American Public Health Association to organize a Committee on the Hygiene of Housing, to serve also as the organ of cooperation for the United States with the Housing Commission of the Health Organization of the League of Nations.

In beginning the work of this committee it has seemed essential to formulate the basic health needs which housing should subserve. This report is a preliminary attempt at such a formulation.

This report consists of 30 basic Principles, with Specific Requirements and suggested Methods of Attainment for each. The Principles and Specific Requirements are believed to be fundamental minima required for the promotion of physical, mental, and social health, essential in low cost as well as high cost housing, on the farm as well as in the city tenement. Under Methods of Attainment are suggested the more important means by which these objectives can be achieved, without excluding alternative means of attaining the same ends, and without attempting exhaustive treatment of the many technical points which are covered elsewhere in the literature of housing and construction methods.

In view of the present status of the

housing program in the United States, particular emphasis has been placed, in drafting these Methods of Attainment, on the needs of new urban construction. The Principles and Specific Requirements, however, are equally valid as a guide for new rural construction or for the appraisal of older housing whether rural or urban, inasmuch as they are based on fundamental biological requirements.

Many of the objectives stated involve problems of management as well as of planning and construction. This must be the case if we are concerned with results achieved, and not merely with requirements on paper. Under the hopeful policy envisaged by the new public housing program—that of continuing management responsibility by local housing authorities—it should be possible to approve given types of housing facilities only for stated conditions of use and occupancy, just as elevators have long been licensed to carry only a certain number of persons, or warehouses a given floor-load.

The report here presented is a preliminary one. In the text are noted points which require further investigation. The committee is conducting research on certain of these points and will follow the findings of other agencies in the field, toward the end that the present report may be revised and amplified in the light of accumulating knowledge.

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Committee on the Hygiene of Housing

English HHSRS

A. Physiological Requirements

Damp and mould growth etc
Excessive cold
Excessive heat
Asbestos (and MMF)
Biocides
CO & Fuel combustion products
Lead
Radiation
Uncombusted fuel gas
VOCs

B. Psychological Requirements

Crowding and Space
Entry by intruders
Lighting
Noise

C. Protection Against Infection

Domestic hygiene, Pests & Refuse
Food Safety
Personal Hygiene Sanitation & Drainage
Water supply

D. Protection Against Accidents

Falls associated with baths etc
Falling on level surfaces
Falling on stairs and steps
Falling between levels
Electrical Hazards
Fire
Flames, hot surfaces etc
Collision and entrapment
Explosions
Position and operability of amenities etc
Structural collapse and falling elements

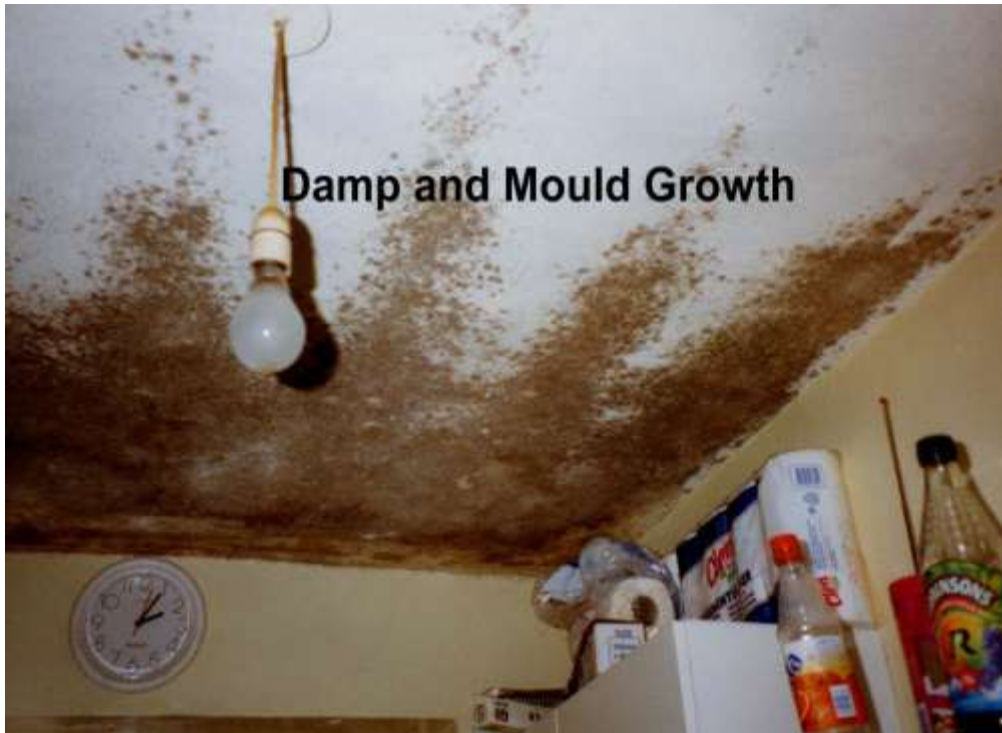
Comparing Different Hazards

Housing hazards differ widely -

- Slow and insidious - damp & mould, excess cold
- Quick - falls
- Death very likely - Radon
- Death very unlikely - noise, position and operability of amenities, etc

Numbers ~

- allow widely differing hazards to be compared



Numbers ~

- used to reflect surveyor judgments
- can take account of potential frequency of occurrence and severity of outcome

HHSRS Hazard Score

Formula used to generate a Hazard Score

Three sets of figures used -

- Likelihood of an occurrence
- Spread of possible harms
- Harm weightings

Likelihood

The likelihood of an **occurrence** over the next twelve months which could cause harm to a member of the age group vulnerable to that hazard

(**occurrence** is an event or period of exposure)

- Likelihood is expressed as a ratio -
e.g. 1 in 18, 1 in 320, or 1 in 1,000

(these are **Representative Scale Points**)

Representative Scale Points

Likelihood ratio is a **Representative Scale Point**
of a range -

1 in 32 = the range 1 in 24 to 1 in 42

1 in 180 = the range 1 in 130 to 1 in 240

1 in 1,000 = the range 1 in 750 to 1 in 1,300

Relating People & Hazards

Potential hazards assessed in relation to:
a member of the most **vulnerable age group**
who might typically occupy or visit the dwelling

e.g. ~ the potential hazard from gaps in
banisters is judged in terms of young child

Harm

The possible health outcome(s) from an occurrence, whether temporary or permanent

That is, the adverse physical or mental effect on the health of a person, such as physical injury, illness, or other health condition or symptom

Spread of Harms

While there may be a most likely outcome, there may also be a possibility of one or more other outcomes

eg, below a 2nd floor window there may be railings on one side and a flower bed on the other; this may mean a 50% chance of death, and a 50% chance of severe bruising

Spread of Harms

The most probable and other possible outcomes given as a percentage of the four main Classes of Harm ~

Class I - Extreme

Class II - Severe

Class III - Serious

Class IV - Moderate

HHSRS Classes of Harm

Examples of Class I ~

- Permanent paralysis below the neck
- Malignant lung cancer
- Regular and severe pneumonia
- 80% or more burn injuries

Examples of Class III ~

- Rhinitis
- Hypertension
- Sleep disturbance
- Gastro-enteritis
- Chronic severe stress
- Serious puncture wounds
- Regular and severe migraine

Examples of Class II ~

- Asthma
- Lead poisoning
- Mild stroke
- Chronic confusion
- Loss of a hand or foot
- Serious fractures

Examples of Class IV ~

- Occasional severe discomfort
- Broken finger
- Slight concussion
- Moderate cuts to face or body
- Mental stress
- Severe bruising to body
- Regular serious coughs or colds

Class of Harm Weightings

Weighting given to each Class of Harm to reflect degree of incapacity

Class of Harm	Weighting
I Extreme	10,000
II Severe	1,000
III Serious	300
IV Moderate	10

HHSRS Hazard Rating Formula

Class of Harm & Weighting			Likelihood		Spread of Harms (%)	=	Product /Score
I	10,000	x	$\frac{1}{L}$	x	O_1	=	S_1
II	1,000	x	$\frac{1}{L}$	x	O_2	=	S_2
III	300	x	$\frac{1}{L}$	x	O_3	=	S_3
IV	10	x	$\frac{1}{L}$	x	O_4	=	S_4

$$\text{Hazard Score} = S_1 + S_2 + S_3 + S_4$$

Example Hazard Rating - 1

Assessment of a fall out of a window to a ground floor room -

- Likelihood - 1 in 18
- Spread of Harm Outcomes -
 - Class I - 0% death judged very unlikely
 - Class II - 10% chance of serious fractures
 - Class III - 31.6% chance of severe concussion
 - Class IV - 58.4% chance of severe bruising

Example Hazard Rating - 1

Class of Harm & Weighting			Likelihood		Spread of Harms (%)		Product /Score
I	10,000	x	$\frac{1}{18}$	x	0	=	0
II	1,000	x	$\frac{1}{18}$	x	10	=	556
III	300	x	$\frac{1}{18}$	x	31.6	=	527
IV	10	x	$\frac{1}{18}$	x	58.4	=	32
						Hazard Score	= 1,115

Example Hazard Rating - 2

Assessment of a fall out of a window to a fifth floor room -

- Likelihood - 1 in 180
- Spread of Harm Outcomes -
 - Class I - 46.4% chance of death
 - Class II - 31.6% chance of serious fractures
 - Class III - 20% chance of severe concussion
 - Class IV - 0% severe bruising very unlikely

Example Hazard Rating - 2

Class of Harm & Weighting			Likelihood		Spread of Harms (%)		Product /Score
I	10,000	x	$\frac{1}{180}$	x	46.4	=	2,578
II	1,000	x	$\frac{1}{180}$	x	31.6	=	176
III	300	x	$\frac{1}{180}$	x	22	=	37
IV	10	x	$\frac{1}{180}$	x	0	=	0
							Hazard Score = 2,791



Staircase in single family house



Staircase in single family house

Staircase in single
family house





Main bedroom in single family house



Window to child's bedroom in single family house

Refurbished kitchen in an
apartment



Refurbished kitchen in an
apartment



Refurbished kitchen in an
apartment

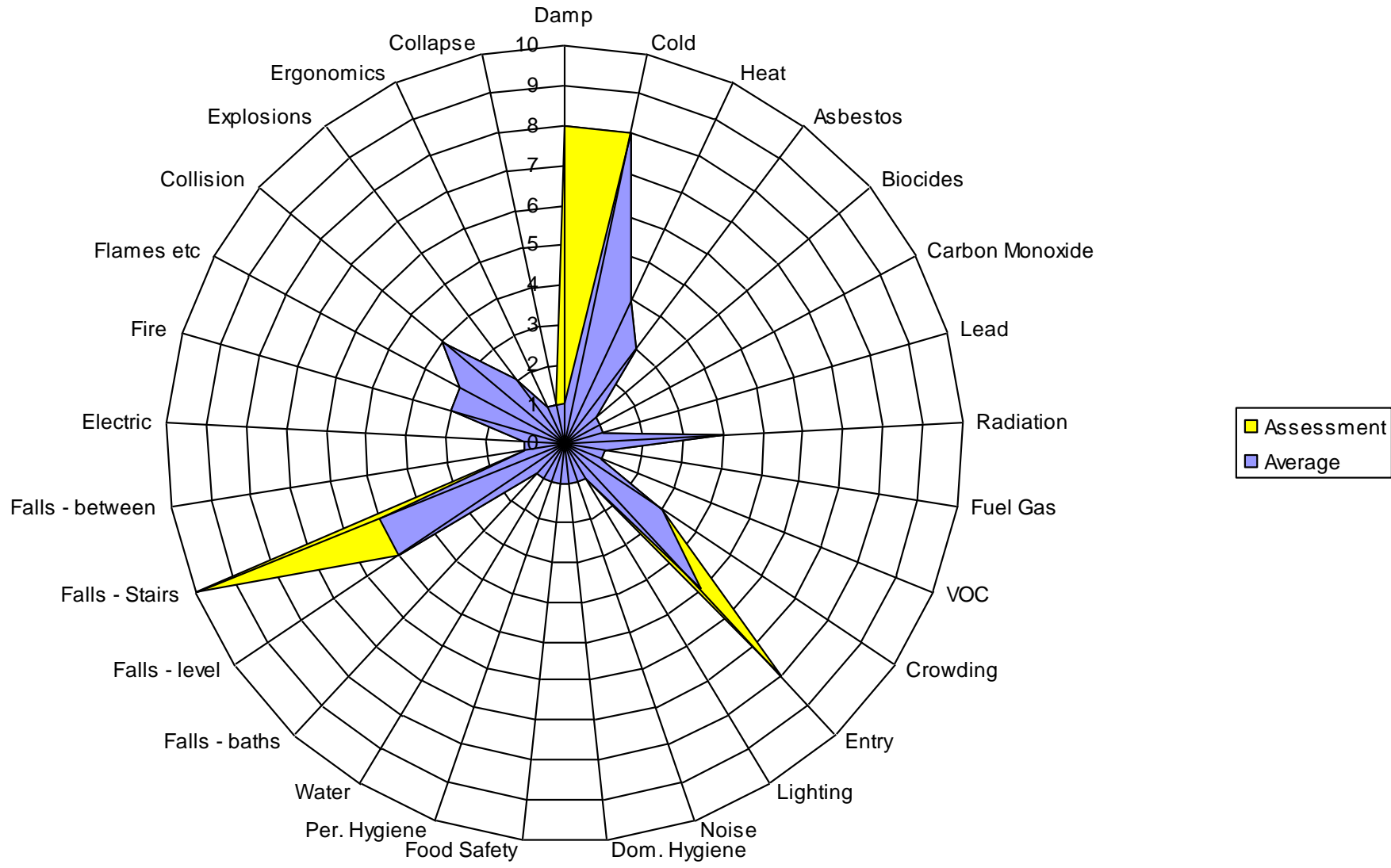


Banding of Scores

Band	Score
A	5,000 or more
B	2,000 - 4,999
C	1,000 - 1,999
D	500 - 999
E	200 - 499
F	100 - 199
G	50 - 99
H	20 - 49
I	10 - 19
J	9 or less

Assessments under HHSRS

- Scores are not aggregated
- Result given in Bands to provide a 'Hazard Profile'



HHSRS Score and Action

NB ~ HHSRS Score does not determine the appropriate action

After HHSRS assessment, determine ~

- if there is a duty or power to consider action
- the most appropriate action

Options for action 1/2

- Hazard Awareness Notice
- Improvement Notice
- Prohibition Order
- Emergency remedial action
- Emergency Prohibition Order
- Demolition Order

Options for action 2/2

- Financial assistance towards the cost of the works ~
 - A Grant
 - A low interest loan
 - Equity release (purchasing a share in the property)
- Area action - clearance

Introduction of HHSRS

- Has put **housing** back on the **Health Agenda**
- Has put **health** back on the **Housing Agenda**
- Allows local authorities to target the most **hazardous housing**
- Allows local authorities to target the most **hazardous conditions**

Tackling fuel poverty using the Housing Health and Safety Rating System

- Report on using
HHSRS to target a
particular issue



Health Costs of Poor Housing

In England, it has been possible to ~

- Identify the number of unsatisfactory dwellings (those in Bands A, B, or C)
and
- Using the health outcomes associated with HHSRS Hazards -
calculate the cost to the health sector

Possible because ~

- English House Condition Survey (EHCS)
 - A sample survey, providing data on the state and condition of English housing
- Housing Health & Safety Rating System (HHSRS)
 - Now used in the EHCS to assess housing conditions

Cost of Poor Housing

Two figures necessary ~

1. Number of unsatisfactory dwellings - the number of dwellings given in the EHCS where hazards assessed as unacceptable
2. Cost of diagnosing and treating health outcomes associated with fuel poverty - available on the UK National Health Service web-site

Cost of Poor Housing

Health costs limited to the outcomes from

Falls on stairs

Falls on the level

Falls between levels

Fire

Lead

Excess cold

Flames, hot surfaces

Dampness and mould

Domestic hygiene

Radon

Electrical

Overcrowding

Noise

Personal hygiene

Carbon Monoxide

Cost of Poor Housing

- There are 4.8 million unsatisfactory dwellings in England
- The health outcomes attributable to these dwellings are estimated to cost the health sector at least £601 million per annum (about \$975 million pa)
- This annual cost to the health sector should be compared with the one-off (single) cost of dealing with the unsatisfactory housing

Conclusions and Perspectives

- The costs limited to direct health outcomes
- Other costs could include ~
 - under-achievement at school
 - working days lost
 - detrimental effect on children's emotional development
 - ...
- Health costs estimated to be around 40% of the **total cost to society** attributable to unsatisfactory housing
- Total cost could be more than **£1.5 billion per year (about \$2.4 billion per year)**

Conclusions and Perspectives

- Money spent on dealing with poor housing is money invested in health
- The opposite is also true - if money is not spent on poor housing, then society will pay, and pay again and again and again
- Low cost interventions have been shown to give good value