What's your contribution worth?

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Quantifying the health benefits of the Decent Homes programme

- Builds on previous BRE research on *The real cost of poor housing* in order to demonstrate that improving housing makes economic and social sense

- Importance of sustained housing investment. Still a backlog of non-decent properties and a need to maintain standards in the future

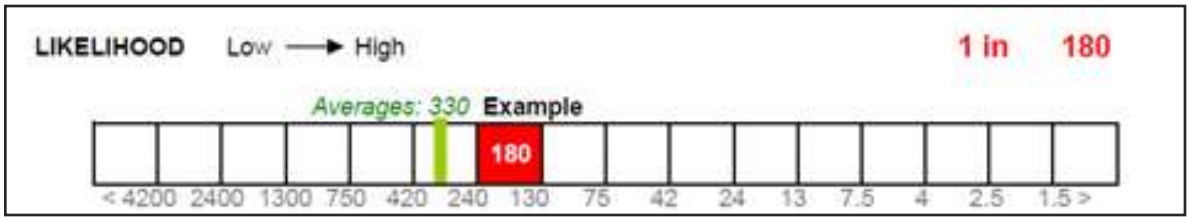
What will be covered

1. Explain the main aims of the research
2. Explain the key aspects of the research: decent homes, the Housing Health and Safety Rating System (HHSRS) and their links with health and well-being
3. The English Housing Survey (EHS)
4. Key findings of the research
5. Making the case for investment programmes

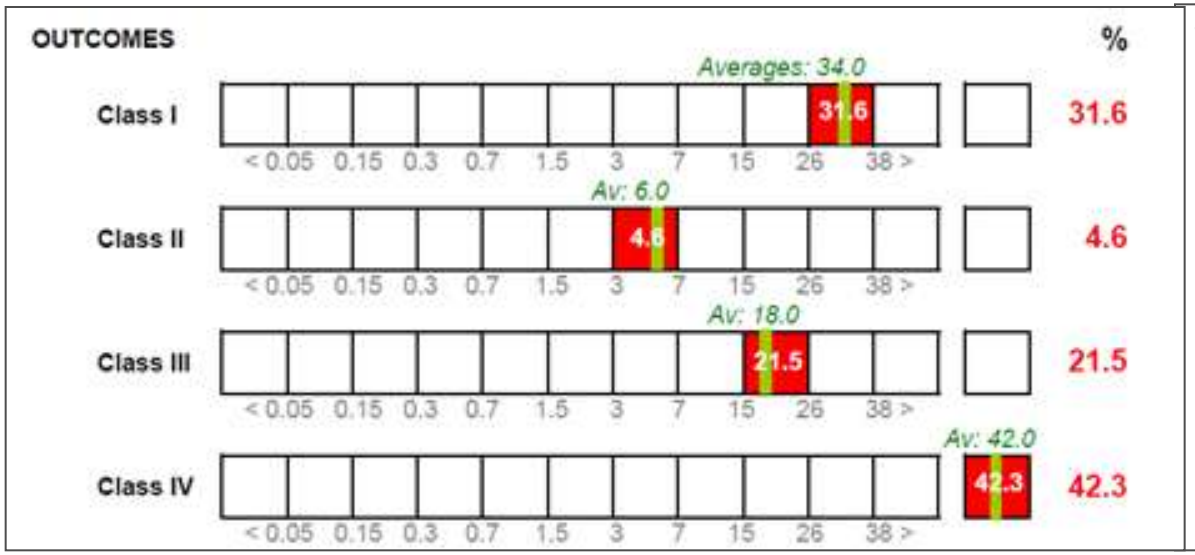
Main aims of research

- Estimate the net change in the number of non-decent social homes with Housing Health and Safety Rating System (HHSRS) hazards from 2001 to 2011
- Estimate the costs of the work involved in making these homes decent
- Quantify the costs to the NHS of non-decent homes using relevant risks under the HHSRS
- **Estimate the savings to the NHS arising from making these homes decent over the 2001-2010 period and also the annual savings to the NHS from 2011 onwards**
- Examine some cost benefits of different types and levels of intervention
- Consider some additional costs to society of non-decent homes and the benefits of improving them

1. How likely a hazard is to effect a vulnerable person over the course of 12 months: 1 in:



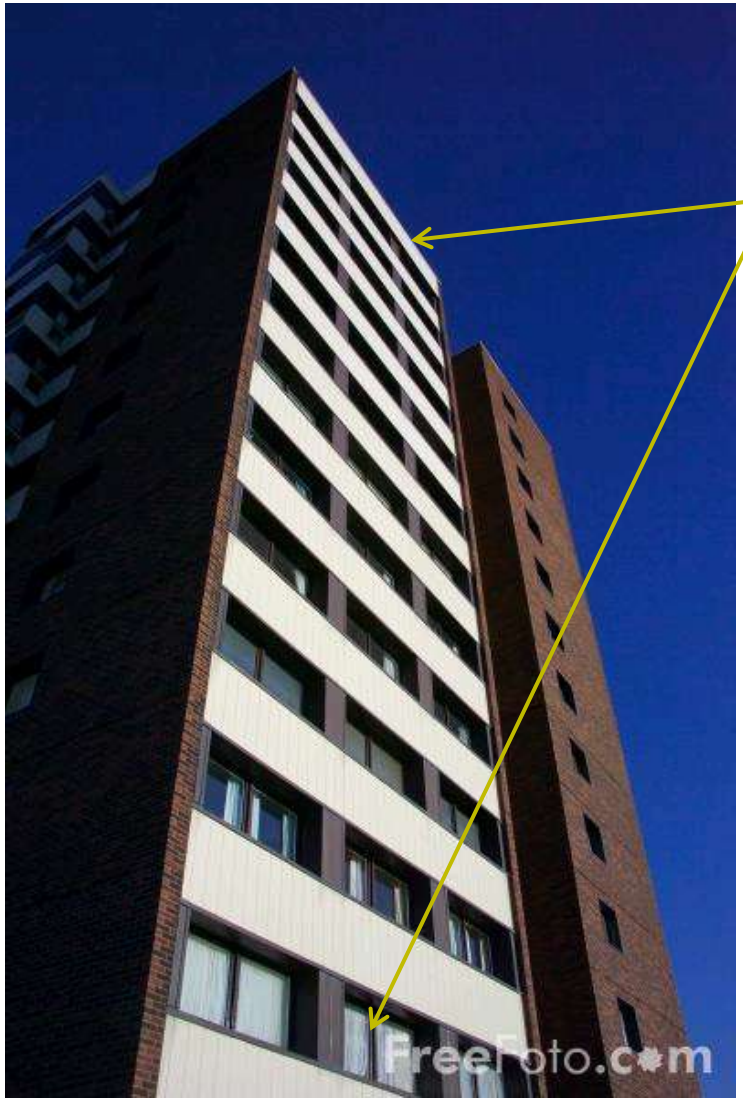
2. What is the most probable spread of harm outcome taking into account the of 4 classes of harm:



Weighting	
Extreme -	10,000
Severe -	1000
Serious -	300
Moderate -	10

Applying the formula gives a numerical hazard rating

Falls between levels



Same likelihood of suffering ill health, but harm outcomes very different

Housing Hazard type	Main health conditions	Vulnerable groups	Mitigating the hazard
Excess cold	Respiratory diseases, chronic obstructive pulmonary disease (COPD), cardio-vascular conditions Increased risk of falls Worsening of symptoms of rheumatoid arthritis and leg ulcers Excess winter deaths Work and school days lost, reduction in educational attainment (Marmot report)	Older people People in fuel poverty Families	Improving heating and thermal efficiency measures
Damp and mould growth	Asthma exacerbation, lower respiratory infections Social isolation	Children Adults	Improved heating
Entry by intruders	Fear of burglary Emotional stress	All	Window and door locks, security lighting and key safes
Falls in baths, on stairs, trips and slips	Accidents Fractures to older people and subsequent loss of independence General health deterioration	Older people	Stair rails, balustrades, grab rails, repair to paths
Accidents affecting children **(Personal Hygiene, Sanitation and Drainage, Falling between levels, Flames and hot surfaces, Electrical hazards, Collision and entrapment)**	Gastro-intestinal illness, physical injury, falls, electrocution, severe burns and scalds	Children	Identifying hazards, provide more space, education of professionals

What is a Decent Home?

To be classed as ‘Decent’, a home must meet **all four** of the criteria below:

1. meet the statutory minimum standard for housing – HHSRS (Housing Health and Safety Rating System);
2. be in a reasonable state of repair;
3. have reasonably modern facilities and services; and
4. provides a reasonable degree of thermal comfort.

Photos: Before and after Decent Homes works

Modernisation/ tackling disrepair to kitchen and bathroom – reduces risks to food safety, domestic and personal hygiene

- major structural repairs and renewal of the cladding.
- roof cover and windows are in fairly urgent need of replacement.
- poor sound and thermal insulation (complaints about noise)
- problems with condensation and mould growth.
- heated by older style storage heaters and have poor energy efficiency.
- Decent Homes work will lower the risks of excess cold, damp and mould, noise and entry by intruders

Mapping HHSRS hazards onto the Decent Homes standard

Decent Homes Criterion	Main improvements undertaken to meet criterion	Examples of how improvements link to better health	Main relevant HHSRS harms
Reasonable state of repair	New windows and external doors. Replacing or carrying out major repairs to external walls, roofs, chimneys, heating systems, electrical systems, kitchens and bathrooms	Improved safety as fewer falls from windows. Works to all building components will mean higher indoor temperatures, better ventilation and watertight fabric of the dwelling. Works give reduced risk of respiratory and cardiovascular conditions, especially for the elderly. Also reduced allergic symptoms (e.g. asthma, rhinitis), infections (mainly fungal), gastric complaints, depression and anxiety	Falls between levels Excess cold Damp and mould Electrical safety Carbon monoxide Noise Entry by intruders Domestic hygiene Food safety
Reasonably modern facilities and services	New kitchens and bathrooms with improved layouts. Provision of adequate space to common areas in flats. Noise reduction measures	Positive impact on personal hygiene. Lower risk of food poisoning Reduced spread of contagious diseases Fewer burns and scolds Fewer trips and falls in common areas	Food safety Domestic hygiene Personal hygiene Falls on the level Hot surfaces Noise
Provides a reasonable degree of thermal comfort (revised definition requires a dwelling to have efficient heating and effective insulation)	Installation and/or upgrading of heating systems and boilers. Insulating cavity walls and providing or topping up loft insulation.	Higher indoor temperature, better ventilation and watertight fabric of the dwelling results in less damp and mould arising through condensation, rising and penetrating damp. Reduced risk of respiratory and cardiovascular conditions, rheumatoid arthritis, impaired thermoregulation (hypothermia) especially for the elderly.	Excess cold Damp and mould

The English Housing Survey

- 22.7 million homes : 65% owned, 18% privately rented, 17% social sector
- 18% of social sector homes built pre 1945, 13% built since 1990
- Just under half of social sector homes were flats (46%), predominately purpose built

EHS used to:

- **calculate reduction in non decent homes from 2001 – 2010 (net fall 888,000)**
- **estimate the number of relevant HHSRS hazards for the 2001 baseline**
- **estimate the reduction in relevant HHSRS hazards from 2001 – 2010 and the associated costs**

Estimating the reduction in costs to the NHS

This involved two basic tasks:

1. Estimating how the Decent Homes programme reduced the number of harmful events for each hazard
2. Costing these reductions using NHS costs used in previous work to obtain the total benefits achieved between 2001 and 2010 and on-going benefits in the future.

Reduction in dwellings with Category 1 and high scoring Category 2 hazards in 2001 and 2010

	Category 1 hazards				High Category 2 hazards		
	2001	2010	reduction		2001	2010	reduction
Excess cold	321,149	113,035	208,115		728,530	179,835	548,696
Falls on stairs	168,014	117,055	50,958		257,621	198,699	58,922
Falls on level	97,075	77,800	19,275		265,088	146,759	118,329
Falls between levels	33,603	26,016	7,586		74,673	114,160	-
Fire	22,402	5,568	16,834		52,271	23,619	28,652
Hot surfaces	14,935	17,757	-		96,918	66,921	29,997
Damp and mould	29,869	18,304	11,565		246,420	43,432	202,988
Carbon monoxide	7,467	1,309	6,158		701,924	364,714	337,210
Noise	-	659	-		421,901	304,382	117,519
Domestic hygiene	4,543	4,187	357		268,822	199,970	68,852
Personal hygiene	947	7,224	-		259,500	189,044	70,456
Food safety	10,801	5,781	5,020		403,233	314,188	89,045
Electrical safety	723	-	723		10,305	4,034	6,271
Lead	5,230	4,835	395		-	-	-
Radon	5,714	9,276	-		-	-	-
Security	49,088	14,290	34,797		517,316	170,001	347,316
Total no of hazards	**773,560**	**425,105**	**361,784**		**4,304,523**	**2,319,759**	**1,984,764**

Typical health outcomes and first year treatment costs

Hazard	Class of Harm Outcome			
	Class 1	**Class 2**	**Class 3**	**Class 4**
Damp & mould growth	n/a	Type 1 allergy *(£1,998)*	Severe asthma *(£1,120)*	Mild asthma *(£180)*
Excess cold	Heart attack, care, death *(£19,851)*	Heart attack *(£22,295)**	Respiratory condition *(£519)*	Mild pneumonia *(£84)*
Radon (radiation)	Lung cancer, then death *(£13,247)*	Lung cancer, survival *(£13,247)**	n/a	n/a
Falls on the level	Quadriplegic *(£52,246)**	Femur fracture *(£25,424)**	Wrist fracture *(£745)*	Treated cut or bruise *(£67)*
Falls on stairs & steps	Quadriplegic *(£52,246)**	Femur fracture *(£25,424)**	Wrist fracture *(£745)*	Treated cut or bruise *(£67)*
Falls between levels	Quadriplegic *(£52,246)**	Head injury *(£6,464)**	Serious hand wound *(£1,693)*	Treated cut or bruise *(£67)*
Fire	Burn, smoke, care, death *(£11,754)**	Burn, smoke, care *(£7,878)**	Serious burn to hand *(£2,188)*	Burn to hand *(£107)*
Hot surfaces and materials	n/a	Serious burns *(£4,652)*	Minor burn *(£1,234)*	Treated very minor burn *(£107)*
Collision & entrapment	n/a	Punctured lung *(£3,439)*	Loss of finger *(£1,536)*	Treated cut or bruise *(£67)*

*** = Costs after 1 year are likely to occur, these are not modelled**

The benefits to the NHS of reducing the most serious (Category 1) hazards in social housing at 2010

Total no. of Category 1 hazards = 361,784
Av cost per dwelling =£1,565

Total savings to the NHS from 2001-2010 estimated to be

£224 million

On-going benefits to the NHS after 2010 estimated as

£40.7 million

The benefits to the NHS of reducing Category 2 hazards in social housing at 2010

Total Category 2 hazards= 2,024,251

Av cost per dwelling= £1,247

Total savings to the NHS from 2001-2010 estimated to be

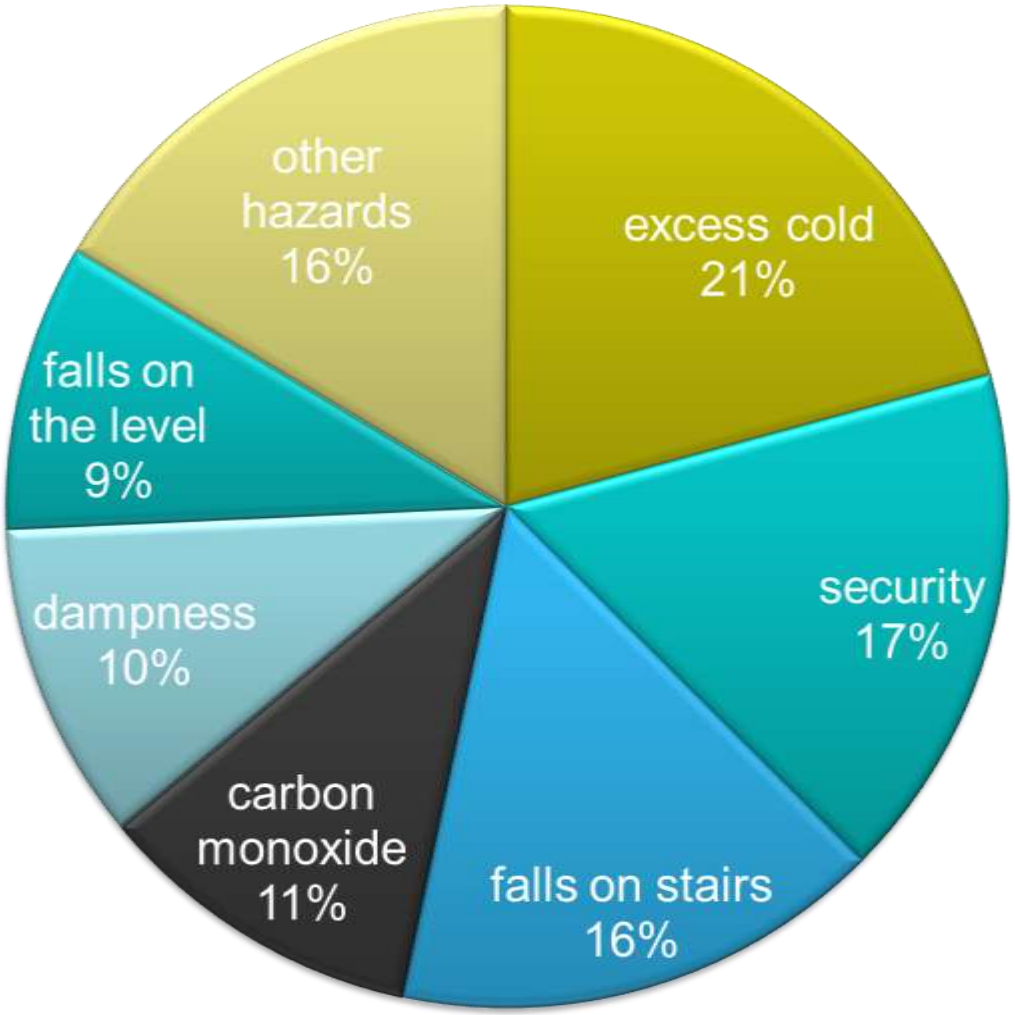
£168 million

On-going benefit to the NHS per annum after 2010

£30.5 million

The total savings to the NHS as a result of improving social sector homes between 2001 and 2010 are estimated to be £392 million with on-going benefits to the NHS of £71 million per annum if the stock remains decent and free of Category 1 and high Category 2 hazards

Share of savings to the NHS by type of harm



Payback period (years) to the NHS of Decent Homes remedial works

Hazard	Hazard Category 1	High-scoring Category 2
Falls between levels	15	n/a
Excess cold	48	over 100
Carbon monoxide	17	33
Security	13	67
Damp and mould	21	over 100
Electrical safety	35	over 100
Fire	20	over 100
Hot surfaces	n/a	over 100
Lead	21	n/a
Noise	n/a	over 100
Falls on the level	12	36
Domestic hygiene	54	over 100
Personal hygiene	n/a	80
Falls on stairs	12	89
Food safety	28	over 100

Additional benefits of Decent Homes

- ‘The Real costs of poor housing’ concludes that the annual cost to the NHS of treating Category 1 and 2 HHSRS hazards through the Decent Homes programme accounts for a maximum **40%** of the total cost to society

- Energy performance – average SAP rating (2001 – 2010)

  Social sector rose from 51.9 to 61.9
  Private sector rose from 44.1 to 52.0

- Carbon emissions reduced from 20.1 million tonnes to 13.5 tonnes

- Average fuel costs reduced by £116 per dwelling

A mid-terraced home modernised under Decent Homes

Before Decent Homes works		After Decent Homes works
Solid, uninsulated walls, partial double glazing, small amount of roof insulation, off-peak storage heaters and electric immersion heater		Condensing gas boiler and radiators for space and water heating, top-up loft insulation, additional double glazing Cost of upgrade 2005 = £3528
SAP = 22		SAP = 59
Annual fuel cost = £965		Annual fuel cost = £461
CO_2 emissions = 8972 kg pa		CO_2 emissions = 4666 kg pa
HHSRS Band = A		HHSRS Band = F

A mid-terraced home modernised under Decent Homes

- Cost savings to NHS pa = £528
- Payback to NHS = 7 years
- Accumulated cost savings 2005–2010 = £2640
- Accumulated fuel savings 2005–2010 = £2520
- Accumulated carbon savings 2005–2010 = 21,530 kg

Keeping homes decent

- Local authorities would have to allow an average of £1032 per property (at 2008 prices) to cover routine replacements of key building elements as they wear out and fail (roofs, boilers, windows, etc.) (BRE for DCLG, 2009)
- Other work that fed into that review estimated that an additional £1700 per dwelling (at 2008 prices) was required for day-to-day maintenance and management of an average property (DCLG, 2009)

If adequate money is not invested, then every home that falls into non-decency will start to cost the NHS more

Making the remaining non-decent homes decent

The EHS estimated that 759,000 dwellings (20%) of all social sector homes were still non-decent in 2010

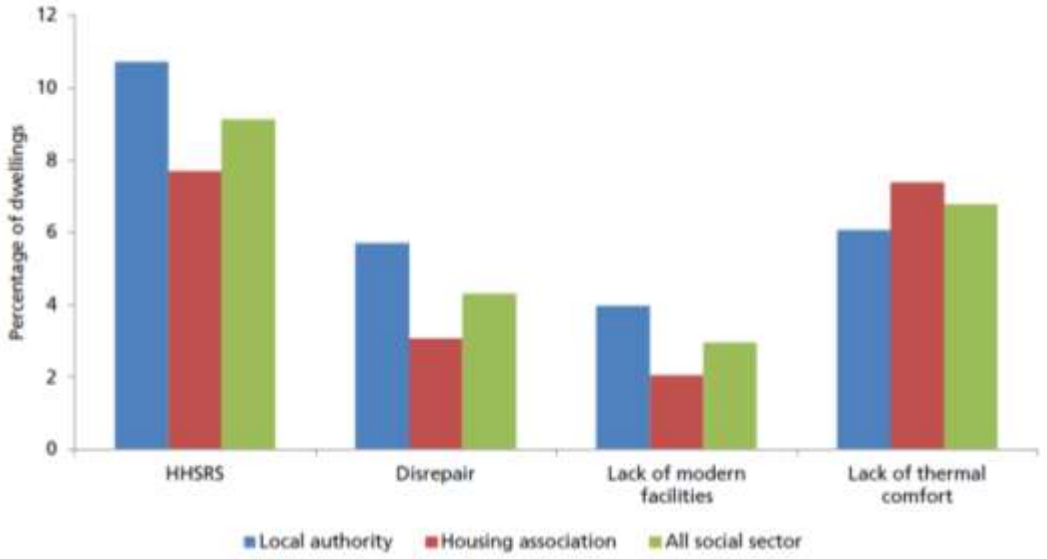
Of these, around half have category 1 hazards:

– Falls on stairs (114,000)

– Excess cold (102,000)

– Falls on the level (75,000)

Percentage of dwellings failing each of the 4 decent homes criteria in 2010



The estimated costs to the NHS of the Category 1 hazards still remaining in 2010 was £184 million

Housing offer?

Outcome frameworks

1. Adult Social Care
2. Public Health
3. NHS England

Public Health Outcomes			
Improving the wider determinants of health	**Health Improvement**	**Health Protection**	**Healthcare, Public Health and preventing premature mortality**
Children in poverty	Self-reported wellbeing	Air pollution	Mortality from preventable causes
Pupil absence	Falls and injuries in over 65's		Mortality from all CVD
Sickness absence rate	Hospital admissions caused by unintentional injuries in children and young people aged 0-14 and 15-24 years		Mortality from respiratory disease
Percentage of the population affected by noise			Emergency readmissions
Fuel poverty			Hip fractures in over 65's
Social isolation			Excess winter deaths

It’s more than bricks and mortar

Opportunities

- Engage with health services, H&WB boards
- Applying for funding – adding value or contributory funding
- Build an offer to meet health priorities and targets
- Demonstrate the value and cost benefits of investment in housing
- Engaging with tenants and encouraging co-operation with contractors
- Housing improvement can ignite wider benefits
- Help to prioritise works

What's the point of repairs and maintenance?

- Health benefits
- NHS savings
- Wider savings
  - reduced crime
  - reduced ASB
  - reduced demands on police services
  - reduced social isolation
  - improved educational attainment
  - reduced absenteeism from work
  - reduced demand on benefits
  - carbon reduction
  - reduced fuel bills
  - improved community spirit

Thank You for Listening

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