The Cost of Poor Housing to Health, and Liverpool’s innovative approach

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‘Real Cost of Poor Housing’ research
Poor housing impacts health and society

Healthcare costs
- Loneliness and stress
- Isolation
- Lack of money
- Pneumonia, heart attacks
- Death

Community stability
- Suicide
- Sleep deprivation
- Depression
- Stress worry
- Drugs/alcohol
- Lack of employment
- Lack of educational achievement
- Burglaries

Environmental targets CO₂

Crime disorder costs
- Access problems
- Overcrowding
- Damp & mould
- Asthma
- Bullying
- Truancy
- Absence from work

Environmental clean up costs
- Anti-social behaviour
- Vandalism
- Graffiti
Housing Health and Safety Rating System (HHSRS)
Category 1 hazard = ‘Poor Housing’

Physiological Requirements
- Damp and mould growth etc.
- Excessive cold
- Excessive heat
- Asbestos etc.
- Biocides
- CO and fuel combustion productions
- Lead
- Radiation
- Un-combusted fuel gas
- Volatile organic compounds

Protection Against Infection
- Domestic hygiene, pests and refuse
- Food safety
- Personal hygiene, sanitation and drainage
- Water supply

Protection Against Accidents
- Falls associated with baths etc.
- Falling on level surfaces
- Falling on stairs etc.
- 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

Psychological Requirements
- Crowding and Space
- Entry by intruders
- Lighting
- Noise
1. How likely a hazard is to effect a vulnerable person over the course of 12 months: 1 in:

![Likelihood Scale]

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

<table>
<thead>
<tr>
<th>Class</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Extreme - 10,000</td>
</tr>
<tr>
<td>II</td>
<td>Severe - 1000</td>
</tr>
<tr>
<td>III</td>
<td>Serious - 300</td>
</tr>
<tr>
<td>IV</td>
<td>Moderate - 10</td>
</tr>
</tbody>
</table>

Applying the formula gives a numerical hazard rating
Falls between levels

Same likelihood of suffering ill health, but harm outcomes very different
HHSRS Category 1 hazards (EHS 2011)

3.4 million (15%) of English homes have a Category 1 HHSRS hazard

- falls on stairs: 1,325,088
- cold homes: 1,352,837
- falls on the level: 543,848
- falls between levels: 239,930
- fire: 128,590
- lead: 112,051
- radon: 107,603
- hot surfaces: 107,168
- falls associated with baths: 78,132
- collision and entrapment: 74,054
- damp and mould: 53,349
- entry by intruders: 47,284
- sanitation: 35,222
- food safety: 32,283
- domestic hygiene: 28,355
- overcrowding: 23,871
- structural collapse: 15,394
- carbon monoxide: 15,336
- electrical problems: 9,204
- ergonomics: 8,201
- uncombusted fuel gas: 7,545
- noise: 6,161
- lighting: 5,453
- water supply: 4,894
- excess heat: 1,369
- explosions: 0
### Typical HHSRS outcomes and 1st year treatment

<table>
<thead>
<tr>
<th>Hazard</th>
<th>HHSRS Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Damp and mould growth</strong></td>
<td>Class 1: Not applicable -</td>
</tr>
<tr>
<td></td>
<td>Class 2: Type 1 allergy (£2,034)</td>
</tr>
<tr>
<td></td>
<td>Class 3: Severe asthma (£1,027)</td>
</tr>
<tr>
<td></td>
<td>Class 4: Mild asthma (£242)</td>
</tr>
<tr>
<td><strong>Excess cold</strong></td>
<td>Class 1: Heart attack, care, death (£19,851)</td>
</tr>
<tr>
<td></td>
<td>Class 2: Heart attack (£22,295)*</td>
</tr>
<tr>
<td></td>
<td>Class 3: Respiratory condition (£519)</td>
</tr>
<tr>
<td></td>
<td>Class 4: Mild pneumonia (£84)</td>
</tr>
<tr>
<td><strong>Radon (radiation)</strong></td>
<td>Class 1: Lung cancer, then death (£13,247)</td>
</tr>
<tr>
<td></td>
<td>Class 2: Lung cancer, survival (£13,247)*</td>
</tr>
<tr>
<td></td>
<td>Class 3: Not applicable -</td>
</tr>
<tr>
<td></td>
<td>Class 4: Not applicable -</td>
</tr>
<tr>
<td><strong>Falls on the level</strong></td>
<td>Class 1: Quadraplegic (£92,490)*</td>
</tr>
<tr>
<td></td>
<td>Class 2: Femur fracture (£39,906)*</td>
</tr>
<tr>
<td></td>
<td>Class 3: Wrist fracture (£1,545)</td>
</tr>
<tr>
<td></td>
<td>Class 4: Treated cut or bruise (£115)</td>
</tr>
<tr>
<td><strong>Falls on stairs and steps</strong></td>
<td>Class 1: Quadraplegic (£92,490)*</td>
</tr>
<tr>
<td></td>
<td>Class 2: Femur fracture (£39,906)*</td>
</tr>
<tr>
<td></td>
<td>Class 3: Wrist fracture (£1,545)</td>
</tr>
<tr>
<td></td>
<td>Class 4: Treated cut or bruise (£115)</td>
</tr>
<tr>
<td><strong>Falls between levels</strong></td>
<td>Class 1: Quadraplegic (£92,490)*</td>
</tr>
<tr>
<td></td>
<td>Class 2: Head injury (£6,464)*</td>
</tr>
<tr>
<td></td>
<td>Class 3: Serious hand wound (£2,476)</td>
</tr>
<tr>
<td></td>
<td>Class 4: Treated cut or bruise (£115)</td>
</tr>
<tr>
<td><strong>Fire</strong></td>
<td>Class 1: Burn, smoke, care, death (£14,662)*</td>
</tr>
<tr>
<td></td>
<td>Class 2: Burn, smoke, Care (£7,435)*</td>
</tr>
<tr>
<td></td>
<td>Class 3: Serious burn to hand (£1,879)</td>
</tr>
<tr>
<td></td>
<td>Class 4: Burn to hand (£123)</td>
</tr>
<tr>
<td><strong>Hot surfaces and materials</strong></td>
<td>Class 1: Not applicable -</td>
</tr>
<tr>
<td></td>
<td>Class 2: Serious burns (£7,378)</td>
</tr>
<tr>
<td></td>
<td>Class 3: Minor burn (£1,822)</td>
</tr>
<tr>
<td></td>
<td>Class 4: Treated very minor burn (£123)</td>
</tr>
<tr>
<td><strong>Collision and entrapment</strong></td>
<td>Class 1: Not applicable -</td>
</tr>
<tr>
<td></td>
<td>Class 2: Punctured lung (£5,152)</td>
</tr>
<tr>
<td></td>
<td>Class 3: Loss of finger (£1,698)</td>
</tr>
<tr>
<td></td>
<td>Class 4: Treated cut or bruise (£115)</td>
</tr>
</tbody>
</table>

*Not applicable = HHSRS class very rare or non existent

* = Costs after 1 year are likely to occur, these are not modelled
NHS first year treatment costs 2011

All Hazards £1.4 Billion

- Excess Cold £848 M
- Falls on stairs £207 M
- Falls on the level £128 M
- Falls between levels £84 M
- Hot surfaces £15 M
- Damp £16 M
- Falls - baths £16 M
- Collision £16 M
- Fire £25 M
## Comparative cost burden to the NHS

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Total cost burden to the NHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical inactivity</td>
<td>£0.9 billion – £1.0 billion</td>
</tr>
<tr>
<td>Overweight and obesity</td>
<td>£5.1 billion – £5.2 billion</td>
</tr>
<tr>
<td>Smoking</td>
<td>£2.3 billion – £3.3 billion</td>
</tr>
<tr>
<td>Alcohol intake</td>
<td>£3.2 billion – £3.2 billion</td>
</tr>
<tr>
<td>Poor housing</td>
<td>£1.0 billion – £1.4 billion*</td>
</tr>
</tbody>
</table>

* £1.4bn = all homes with category one HHSRS hazards, England
Liverpool Healthy Homes Programme
Liverpool Life Expectancy

Population: 466,000

<table>
<thead>
<tr>
<th>Area</th>
<th>Liverpool</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>74.8</td>
<td>77.9</td>
</tr>
<tr>
<td>Female</td>
<td>79.2</td>
<td>82.0</td>
</tr>
</tbody>
</table>

County 76.6
Croxteth 75.3
Fazakerley 77.7

Kirkdale 73.8
Anfield 74.7
Tuebrook 77.3
West Derby 79.6

Riverside 74.9
St Michaels 76.9
Mossley Hill 81.4

Central 78.6
Everton 75.0
Kensington 75.2

Church 82.6
Childwall 82.7
Cressington 79.0
Belle Vale 77.2

Picton 72.9
Woolton 80.7

Knotty Ash 78.4
Speke Garston 74.0

Northern Line
Bus Route 12
City Line
Health

- Rate of excess winter deaths – 280 per year (NHS health profile 2013)
- For each winter death, there are 8 emergency admissions
- Accidents in the home cause an estimated 70 deaths and 4,000 hospital admissions per year in Liverpool

Poor housing conditions are implicated in 500 deaths and around 5,000 illnesses requiring medical attention each year in Liverpool (from national BRE estimates)

Commissioning Drivers

- Tackling health inequalities
- JSNA
- Housing, Health and Safety Rating System
Healthy Homes Programme - objectives

Phase 1

- At scale to make a real population difference
- Identify properties in priority neighbourhoods
- Assess the health and housing needs of each occupant
- Engage residents into health and well-being related services
- Carry out full health and safety inspection in worst properties and secure necessary improvements
- Home Safety promotion (particularly under 11’s and over 65’s)

Through the removal of hazard exposure, the programme is designed to reduce premature deaths by up to 100 when fully implemented, and reduce GP consultations and hospital admissions by over 1000 cases
Progress - April 2009 to August 2015

- 54,844 initial assessments
- 23,421 surveys completed
- 28,016 referrals to partners
Referrals to Partner agencies

Healthy Homes

- Doctors: 1,626
- Mental Wellbeing: 1,167
- Pension Service: 148
- Fuel Debt: 427
- Benefit Max: 1,376
- Dentists: 3,064
- Food and Nutrition: 2,384
- Case Support: 831
- Smoking: 938
- Alcohol and drugs: 119
- Sure Start: 578
- Lifestyle Advisor: 1,473
- Career Advice: 1,251
- Careline: 1,120
- Age Concern: 519
- Energy Efficiency/Fuel poverty: 1,328
- Housing condition: 5,715

Total: 28,016
Progress – Housing conditions

- **6,048** Health & Safety inspections
- **4,341** Serious housing hazards identified:
  - Rented homes - landlord enforcement
  - Owned homes – advice, access to financial assistance, help with moving, land charge works
- **£5.3M** Private sector investment
- **30** Construction jobs supported (est)
- **2,592** Repair referrals to social landlords
Common home hazards to August 2015

- Excess cold: 1402
- Fire: 802
- Damp & Mould: 494
- Fall stairs: 377
- Personal Hygiene S & D: 158
- Fall level surface: 158
- Electrical hazard: 148
- Fall bet levels: 135
- Food Safety: 112
- Entry by intruders: 104
- Struc coll & falling El: 91
- Dom Hyg pest & ref: 59
- Crowding & space: 51
- Falls (bath): 43
- Flame hot surfaces: 38
- Collision & entrapment: 35
- Pos & Op of amenities: 30
- Excess Heat: 29
- Lighting: 15
- CO & fuel com: 15
- Explosions: 14
- Water Supply: 12
- Uncom fuel gas: 7
- Noise: 4
- Asbestos & MMF: 3
- Lead: 2
- Vol Org Compound: 1
- Radiation: 1
- Biocides: 1
Value for Money?

BRE evaluation of first year’s operation shows:

- **861** HHSRS inspections removing **725** Cat1 hazards
- **Total project cost £1.07M** (Inspection cost £300K)

- **On-going annual NHS savings £440K** (£4.4M over 10 years)
  - Excess cold hazard alone £341,000 (£3.41M over 10 years)
- **Wider Society annual savings £1.1M** (£11M over 10 years)
  - Excess cold hazard alone £852,000 (£8.52M over 10 years)

**Total anticipated savings by HHP:**

**£55 Million** (£42M from excess cold)

(Building Research Establishment Jan 2011)
Remember, it costs to do nothing!

Thank you for listening

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