

The impact on older people of excess heat in the home: evidence and opportunity

“Small but significant,” Care & Repair England

13 July 2017

Dr Alan Lewis, University of Manchester

Oxford Brookes University

Prof. Rajat Gupta (PI)

Laura Barnfield

Matt Gregg

Lancaster University

Prof. Gordon Walker (Co-I)

Dr Louis Neven

University of Manchester

Dr Alan Lewis (Co-I)

Excessive heat: health risks

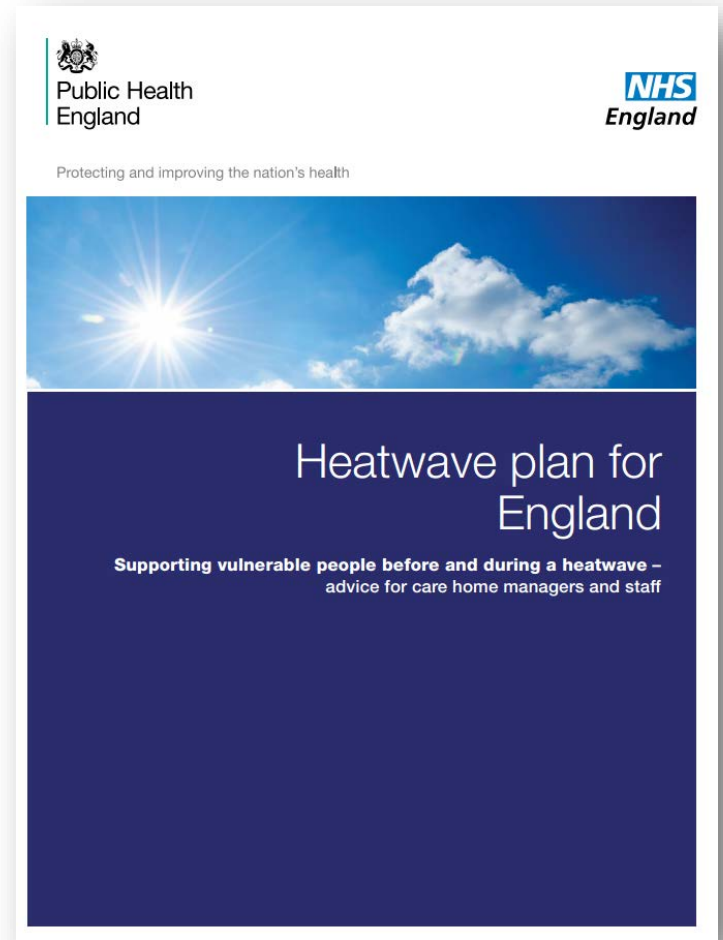
- **Climate change** is expected to lead to hotter and drier summers, with **heatwaves** of greater frequency, duration and intensity.
- International studies indicate that heatwave-related **mortality is highest in the older population**.
- Age can impair the body's **physiological response**:
 - decreased skin blood flow associated with a lower cardiac output; reduced sweat rate
- Capacity to cope with heat can also be diminished by:
 - chronic or severe illness
 - obesity
 - use of certain medications

Excessive heat: health risks

- Other factors that can affect the vulnerability of older people to high temperatures include:
 - **Physical environment**
 - Important given time spent at home
 - **Personal and social factors:**
 - Social and support networks
 - Behaviours, practices and capacity to change
 - **Acclimatisation** – social practices and behaviours, alongside physiological changes over time, affect people's ability to adapt to local conditions.
- People's **perception** of the risk is another key factor in their adaptability to extreme weather. Healthy, independent older people can dissociate themselves from being labelled 'old'.

Excessive heat: health risks

Although there is a national **Heatwave plan** and **specific guidance** for the health and care sectors, it is unclear how **effective** this guidance has been in changing **awareness**, **preparedness** or **practice** during heatwaves, in the short or longer term.





Project aims

14-month study (February 2015 – March 2016) funded by the Joseph Rowntree Foundation, which:

- aimed to explore the extent to which care homes and extra-care housing schemes in England are fit to cope with climate change, specifically higher average temperatures and heatwaves

This presentation

- What wider lessons might we learn?



Mixed-methods approach

Socio-technical case-study approach:

- **Building surveys** to identify design features that can enable or prevent occupants and their carers to control their thermal environment
- **Climate modelling** using future weather data (2030s, 2050s and 2080s) in dynamic thermal simulation
- **Monitoring of environmental conditions** in the four case studies (June 2015 – September 2015)
- **Qualitative Interviews** with **Scheme managers** (5), **Carers** (7), **Maintenance staff** (2) and **Residents** (10) – to assess how building design, management and occupant practices address overheating risks and vulnerabilities (September 2015)

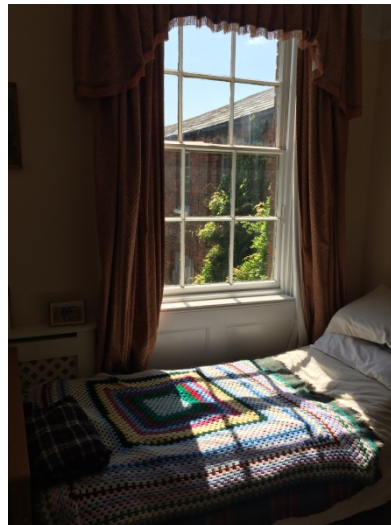
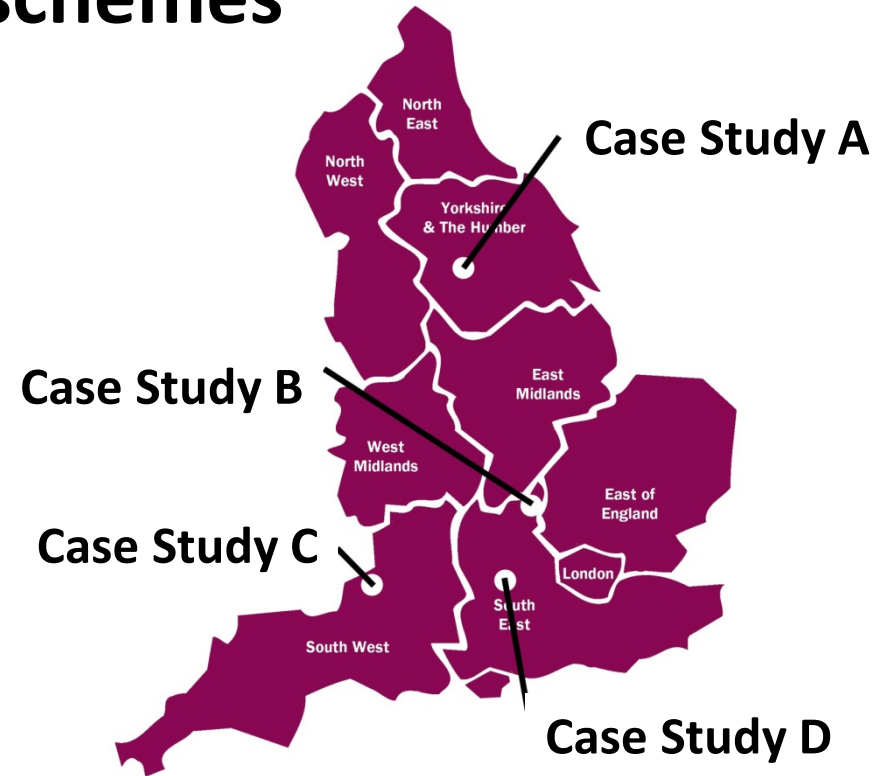
Case study schemes

Care homes:

- **Case Study A** (42 beds / 2005)
- **Case Study B** (23 beds / mid-late 19th c.)

Extra-care schemes:

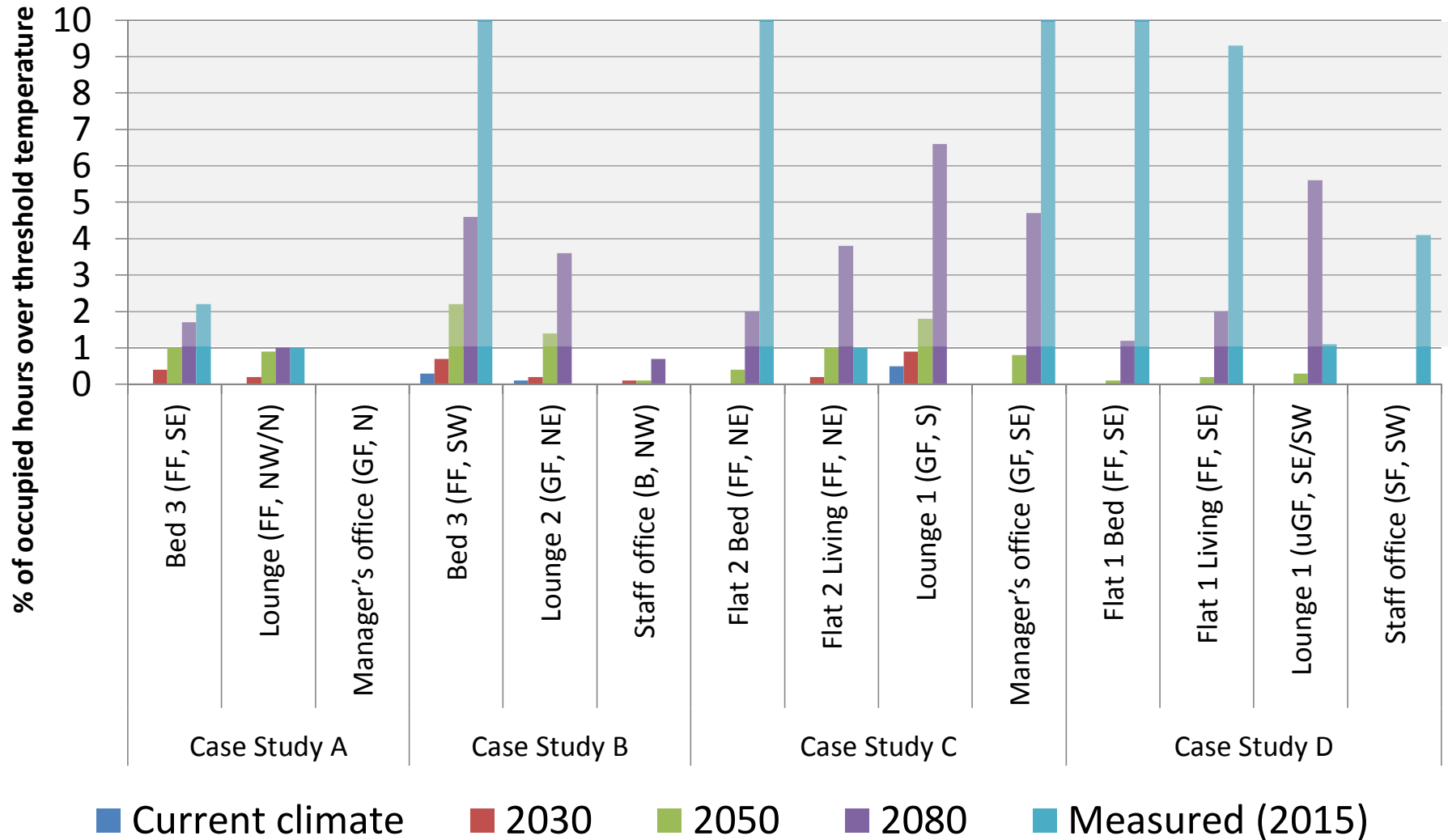
- **Case Study C** (50 flats / 2006)
- **Case Study D** (60 flats / 2012)





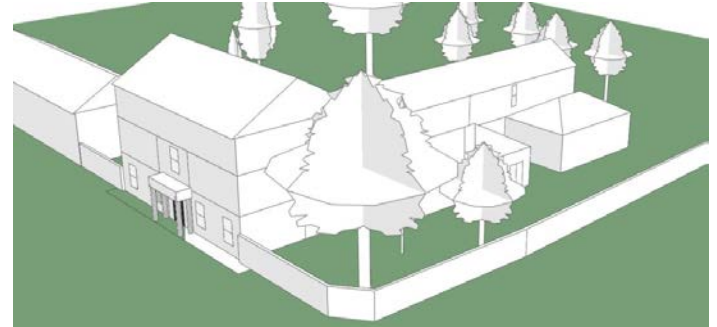
Current and future overheating risks in the case studies

Static method: Indoor temperatures $+26^{\circ}\text{C}$ for up to **76%** of monitored period



Mismatch between climate modelling and monitoring results underplays present day risks from high temperatures

- **Modelling** indicates **some risk** of future overheating BUT **little current** overheating risk.
- However empirical **monitoring** indicates **prevalent and current risk** of overheating, particularly during **short-term heat waves**.



A culture of 'keeping older occupants warm'

- Prevalent perception, from designers to front-line staff, that older people 'feel the cold'.
- Provision of warmth is associated with good care.
- Cold seen to represent a bigger threat to older occupants' health – there is less recognition that heat can also present a significant health risk.
- Heatwaves regarded as rare in the UK.
- Diversity of opinion amongst older occupants about what constitutes a comfortable temperature, but some older occupants too warm in summer.



Limited heatwave planning

- Managers aware of **Public Health England Heatwave Plan** – other staff unaware.
- Aspects of the plan implemented on **‘ad-hoc’ basis**: checking occupants’ clothing, “pushing fluids,” providing electric fans.
- **Ingrained practices** of residents a barrier during heat waves: meals, clothes, washing.
- Natural ventilation limited by **window restrictors**, and concerns about **draughts, security and insects**.
- **Need** for cool rooms, additional staff, and consultation with occupants’ GPs **questioned**.



Lack of effective heat management due to design and management issues

- **Confusion** among staff and occupants about **how** to operate heating, and **who** is responsible.
- **Heating system** was **in operation 24/7** including during the **summer months** in all of the case study buildings.
- Reports of **heating being on when windows are open**.
- **Centralised heating** and hot water systems can lead to unwanted heat gains due to pipework.
- **Lack of investment** in features that would enable better heat management, particularly with regard to **ventilation** and **solar shading**.





Summary of findings

- Care buildings are overheating in summer, indicating that heat management is poor.
- Belief that health risks come from cold, not heat, and heatwaves rare.
- Some aspects of PHE Heatwave Plan implemented on an ad-hoc basis.
- Confusion about the operation of heating and ventilation, with heating often on throughout the summer.
- Lack of structural investment in building-features that would enable heat management.

Wider lessons

- The perception that heatwaves pose little risk to older occupants needs to be challenged.



Home > Finance > Personal Finance > Winter fuel allowance: Will I still get my winter fuel payment under



Personal Finance News

Winter fuel allowance: Will I still get my winter fuel payment under a Tory government?

MILLIONS of pensioners are set to lose up to £300 in help to pay energy bills as part of the Winter Fuel Allowance, in plans laid out by the Conservatives.

Login Register Subscribe Rewards Search Video

The Telegraph

HOME | NEWS |

News

UK | World | Politics | Science | Education | Health | Brexit | Royals | Investigations

News

Donald Trump pulls US out of Paris climate accord to 'put American workers first'





Wider lessons

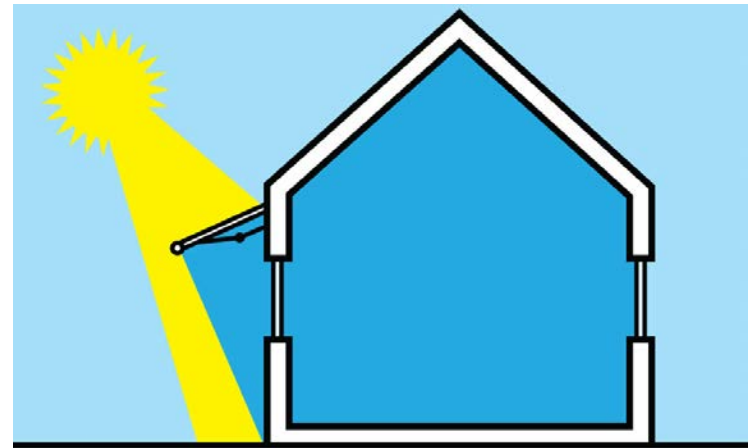
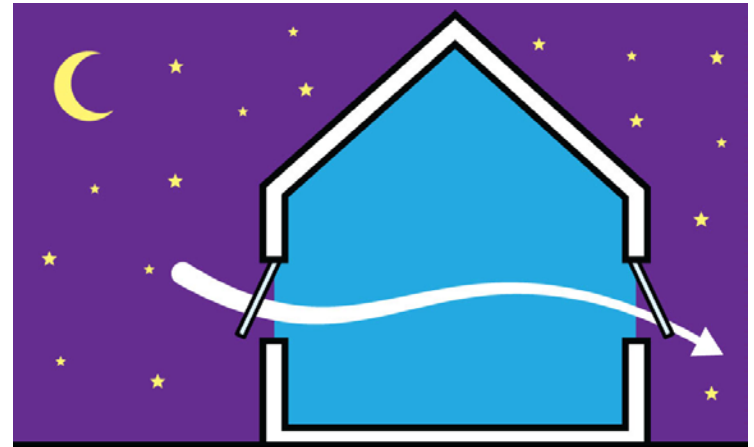
- There must be effective mechanisms for alerting older occupants when heatwaves are forecast.
- There should be greater awareness of the Public Health England Heatwave Plan, including among older occupants, particularly with regard to the following:
 - Do older occupants know how to keep themselves cool during heatwaves? (e.g. through wearing light, loose-fitting clothing)



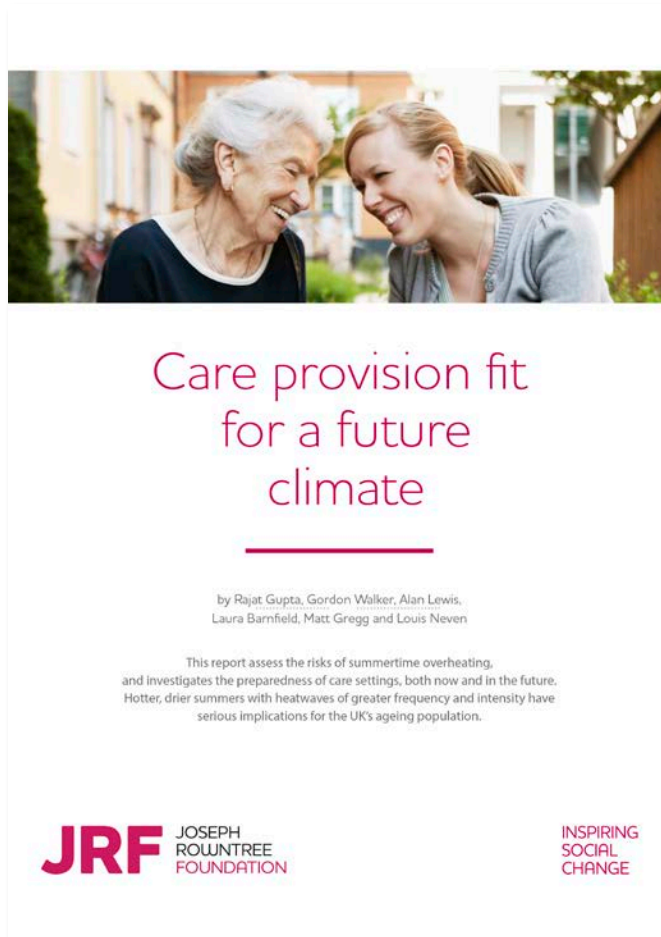


Wider lessons

- Do older occupants know how to keep their homes cool during heatwaves? (e.g. through night-time purging)
- Are older occupants able to keep their homes cool during heatwaves? Can adaptations be made in advance of heatwaves to enable this?



Further information



<https://www.jrf.org.uk/report/care-provision-fit-future-climate>



<https://www.gov.uk/government/publications/heatwave-plan-for-england>