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Protecting and improving the nation's health

IRDR Integrated Research on Disaster Risk

International Science Council

UNISDR

UNITED NATIONS UNIVERSITY

SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

TRENDS
Thematic Research Network on Data and Statistics

World Health Organization

How to adapt to climate change(s) – face reality and take action
～Resilient Society against Climate Change～
Date: 13:00-17:30, October 6th, 2018

Global Strategy for Climate Change Adaptation

Professor Virginia Murray, Public Health England
Head of Global Disaster Risk Reduction
Member of Integrated Research on Disaster Risk (IRDR) Scientific Committee
Member of the UN Sustainable Development Solutions TReNDS Network
Member of the WHO Collaborating Centre on Mass Gatherings and Global Health Security

The IPCC Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation

http://www.ipcc.ch/pdf/special-reports/srex/SREX_Full_Report.pdf

ipcc
INTERGOVERNMENTAL PANEL ON climate change

1989

International Decade for Natural Disaster Reduction (IDNDR)

1994

Yokohama Strategy and Plans of Action

1999

ISDR International Strategy for Disaster Reduction

2005

Hyogo Framework for Action 2005-2015

2015

Sendai Framework for Disaster Risk Reduction 2015-2030

1992

United Nations Framework Convention on Climate Change

PARIS2015 UN CLIMATE CHANGE CONFERENCE COP21·CMP11

2000

WE CAN END POVERTY 2015 MILLENNIUM DEVELOPMENT GOALS

SUSTAINABLE DEVELOPMENT GOALS

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Sendai Framework for Disaster Risk Reduction 2015 - 2030

United Nations

Sendai Framework for Disaster Risk Reduction 2015-2030

1 Global Outcome

13 Guiding Principles

4 Priorities for Action at all levels

7 Global Targets

UNISDR

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Sendai Framework for Disaster Risk Reduction 2015-2030

The substantial reduction of disaster risk and losses in **lives, livelihoods and health** and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries

Health resilience is strongly promoted throughout.

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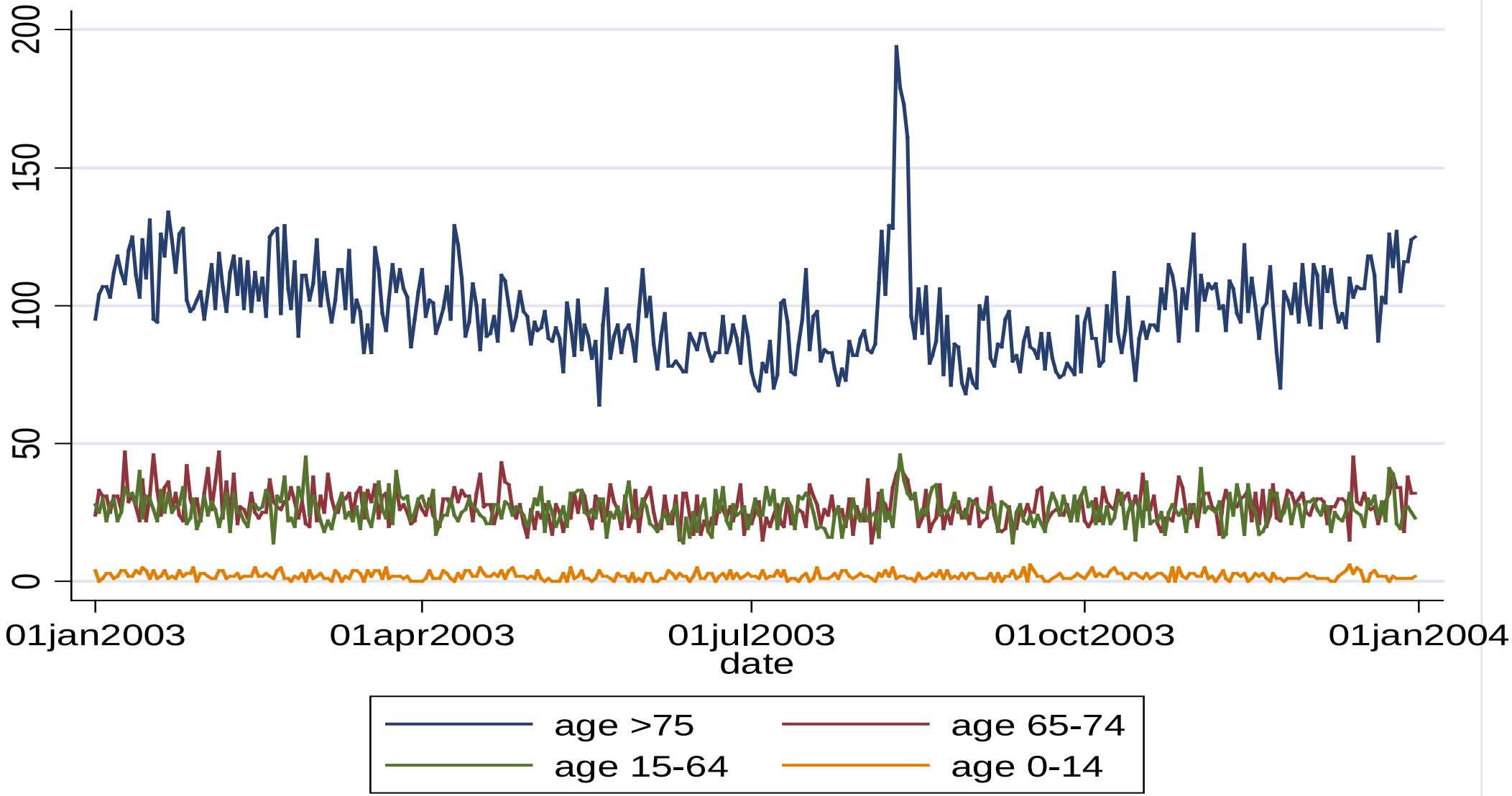
Daily mortality in London, 2003



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Heatwave Plan for England

Making the case: the impact of heat of heat on health - now and in the future

PDF, 350KB, 21 pages

This file may not be suitable for users of assistive technology. Request a different format.

Advice for health and social care professionals: supporting vulnerable people before and during a heatwave

PDF, 264KB, 18 pages

This file may not be suitable for users of assistive technology. Request a different format.

Advice for care home managers and staff: supporting vulnerable people before and during a heatwave

PDF, 264KB, 14 pages

This file may not be suitable for users of assistive technology. Request a different format.

Looking after yourself and others during hot weather

PDF, 328KB, 7 pages

This file may not be suitable for users of assistive technology. Request a different format.

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Heatwave Alert Levels

Level 0	**Long-term planning** *All year*
Level 1	**Heatwave and Summer preparedness programme** *1 June – 15 September*
Level 2	**Heatwave is forecast – Alert and readiness** *60% risk of heatwave in the next 2–3 days*
Level 3	**Heatwave Action** *Temperature reached in one or more Met Office National Severe Weather Warning Service regions*
Level 4	**Major incident – Emergency response** *Central Government will declare a Level 4 alert in the event of severe or prolonged heatwave affecting sectors other than health*

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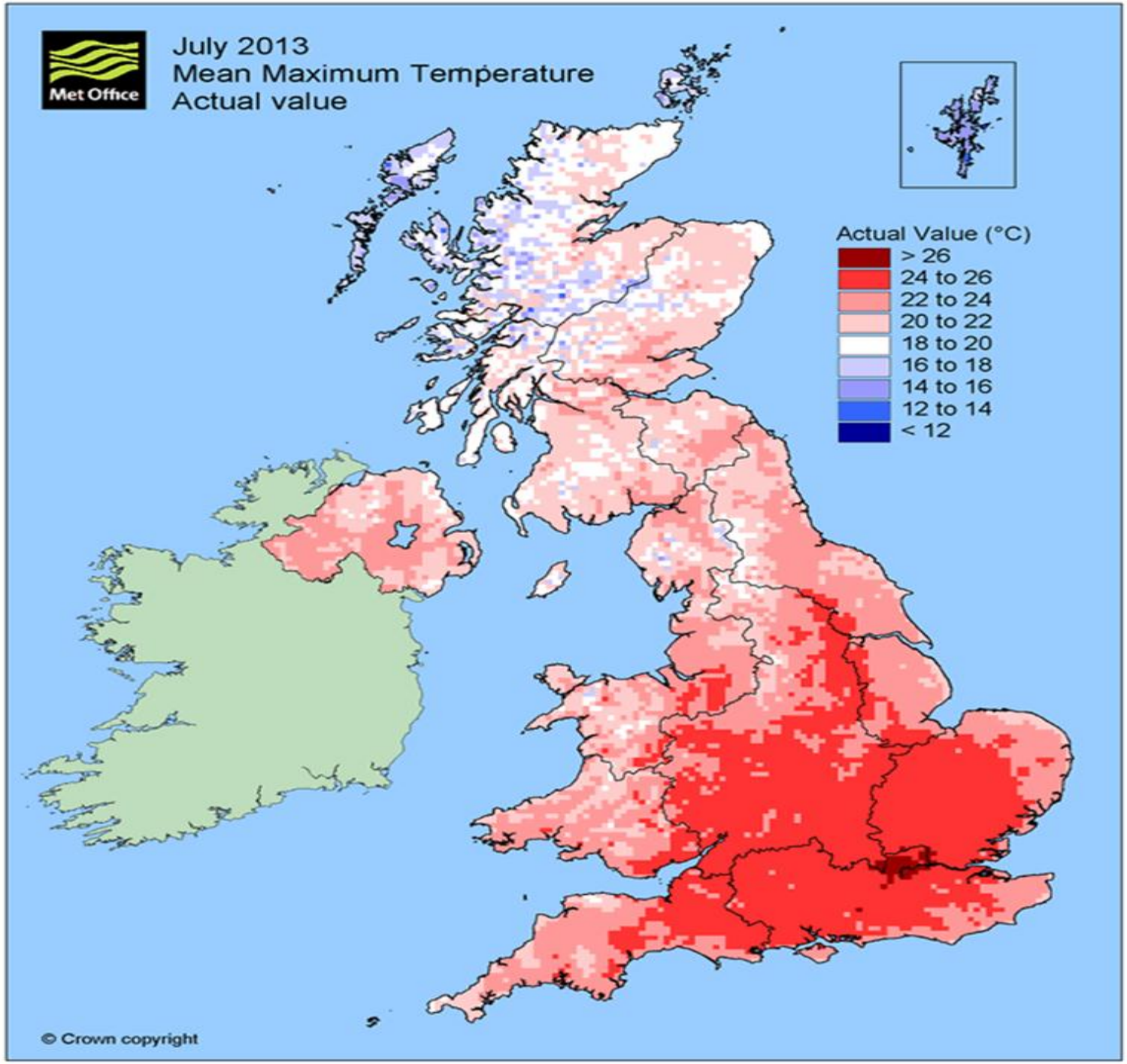
Courtesy of the Met Office

July 2013 Mean Maximum Temperature

http://www.metoffice.gov.uk/climate/uk/summaries/anomacts



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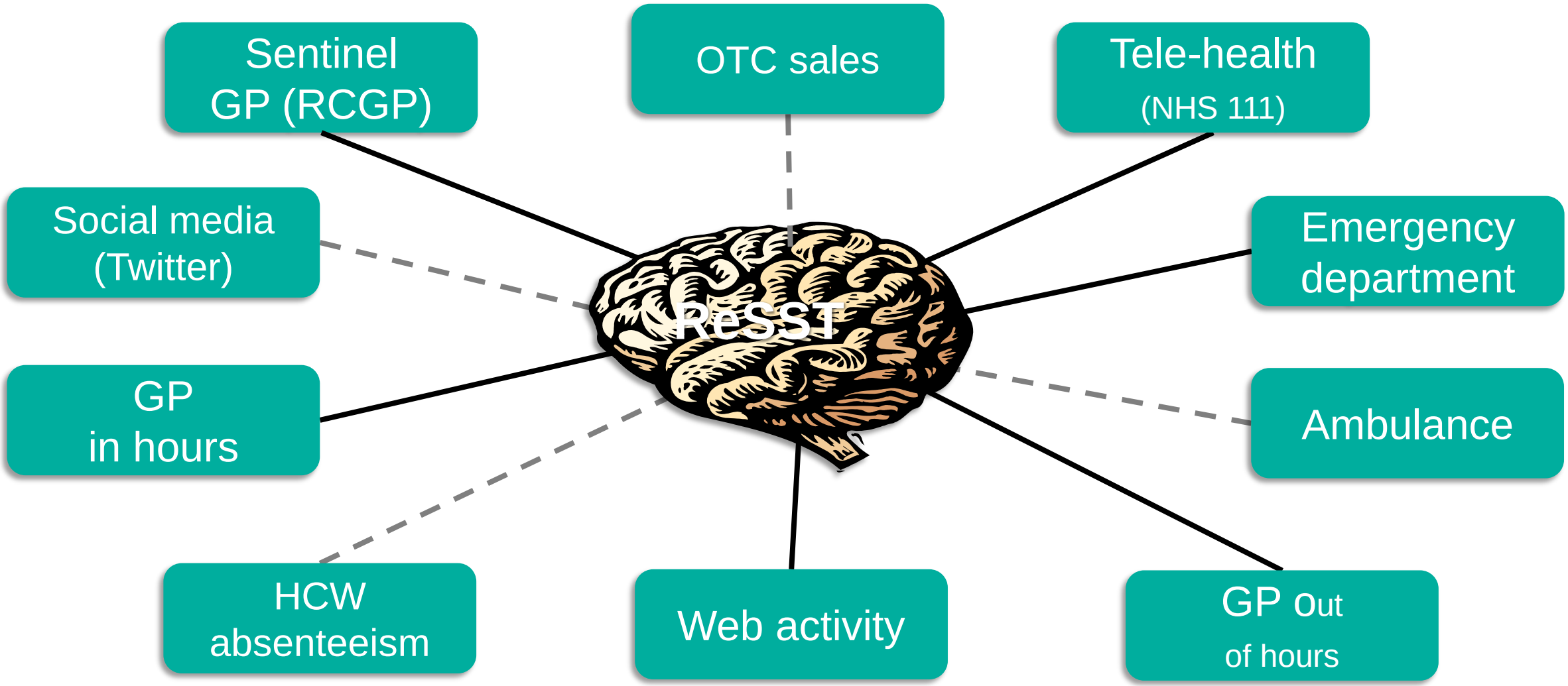
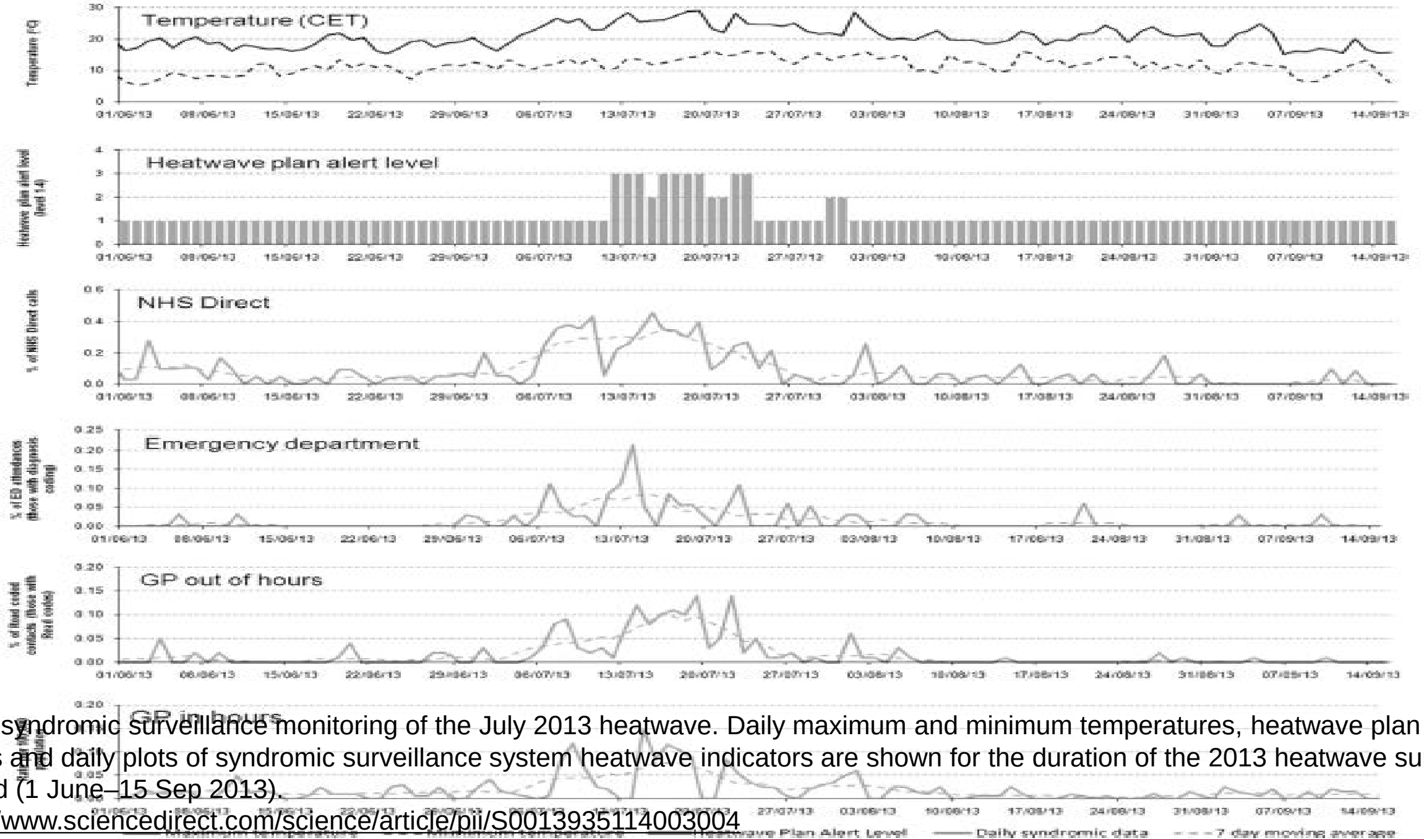
Current PHE syndromic system data sources





Daily syndromic surveillance monitoring of the July 2013 heatwave. Daily maximum and minimum temperatures, heatwave plan alert levels and daily plots of syndromic surveillance system heatwave indicators are shown for the duration of the 2013 heatwave surveillance period (1 June–15 Sep 2013).

http://www.sciencedirect.com/science/article/pii/S0013935114003004

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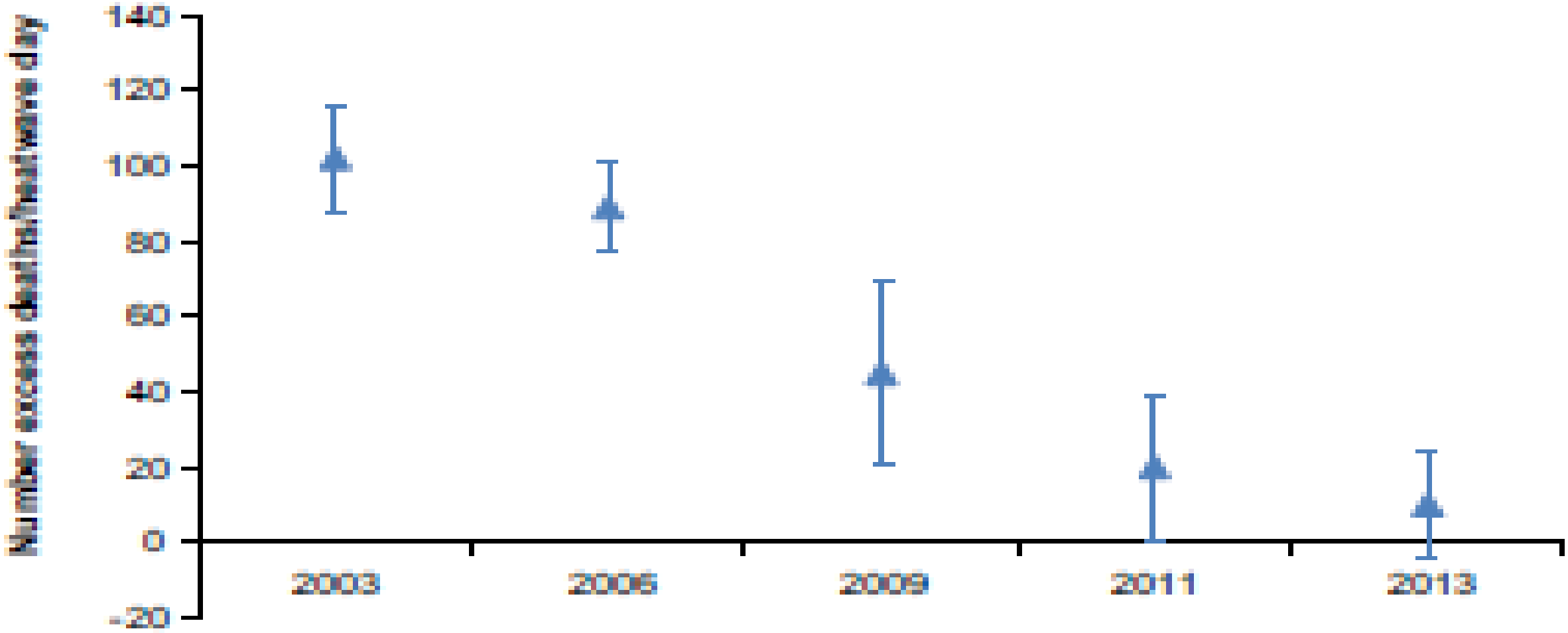
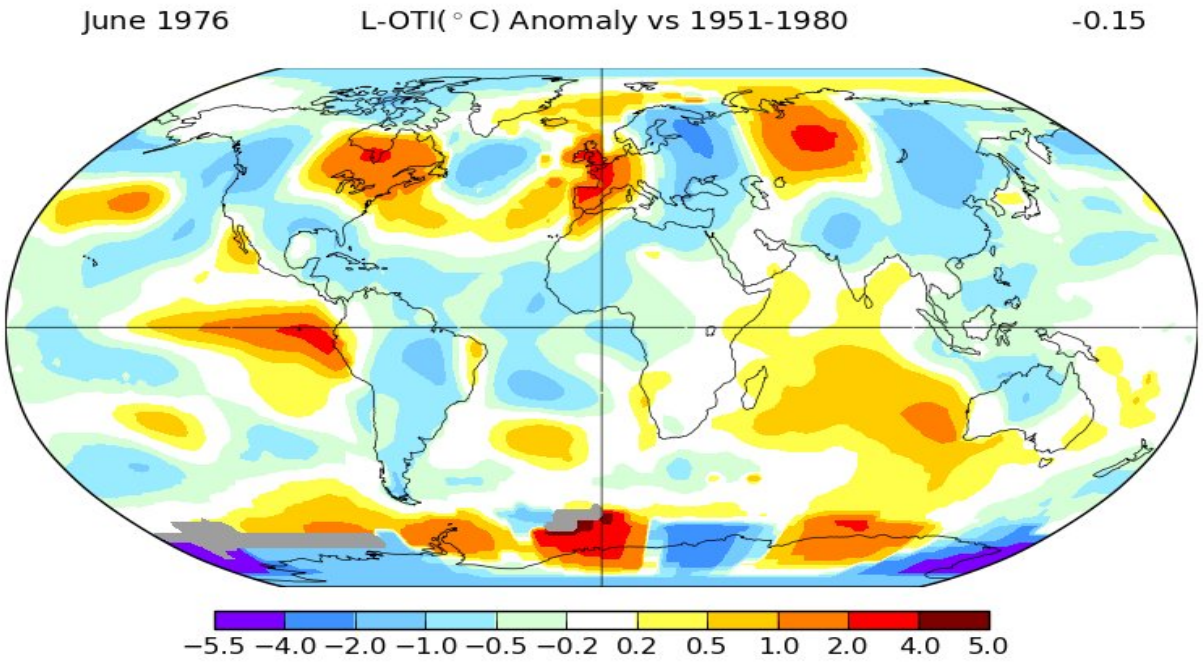
Excess deaths in 65+ year olds in heatwave years

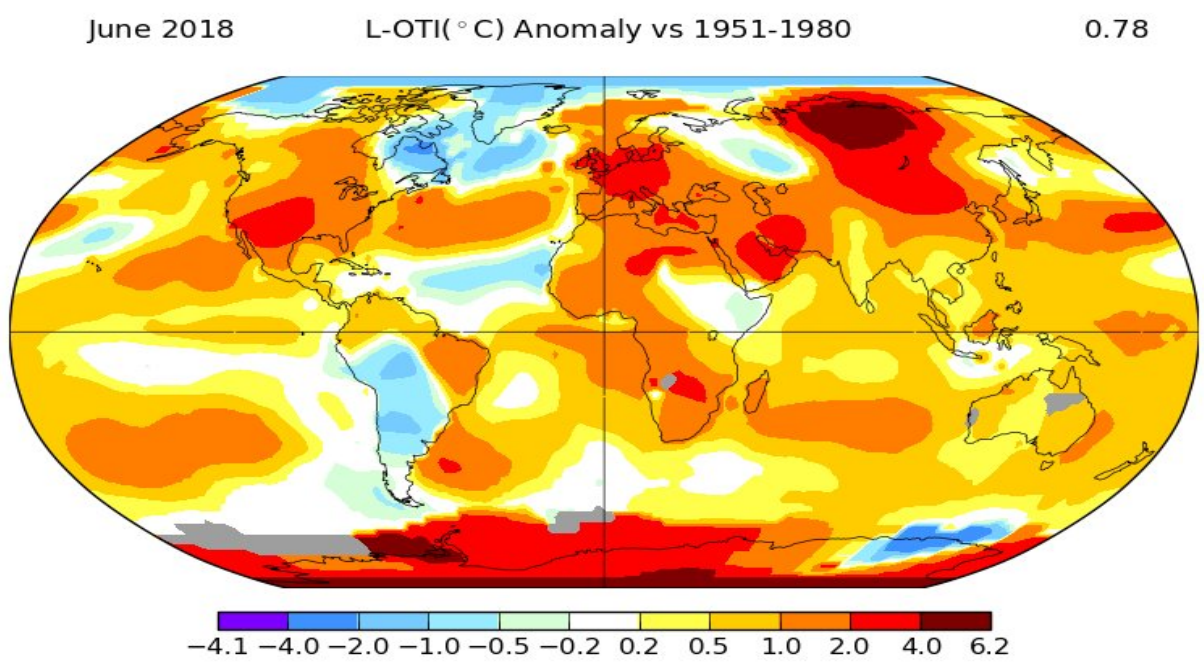


Green et al Mortality during the 2013 heatwave in England – How did it compare to previous heatwaves? A retrospective observational study. Environmental Research 2016

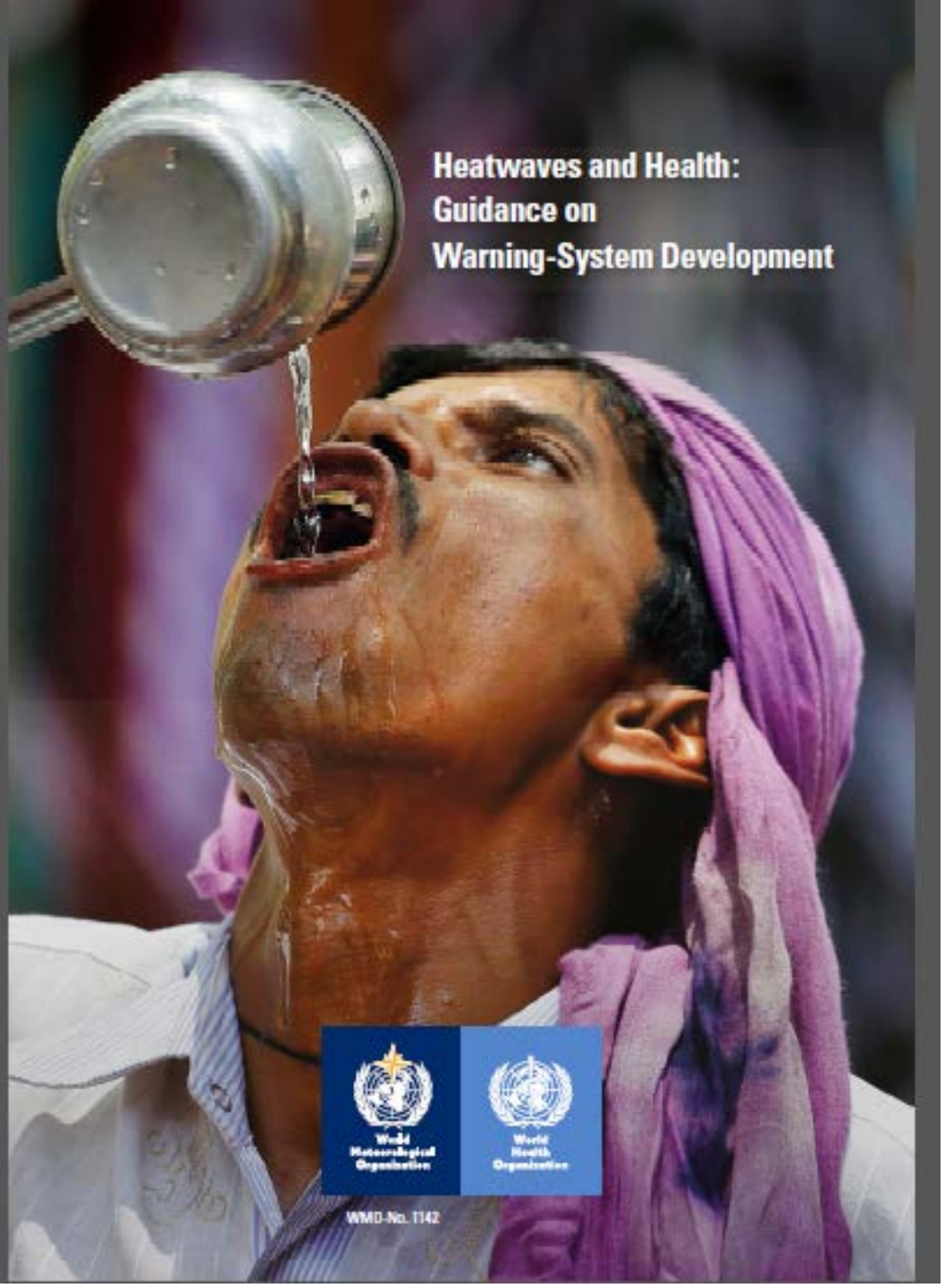
June 1976

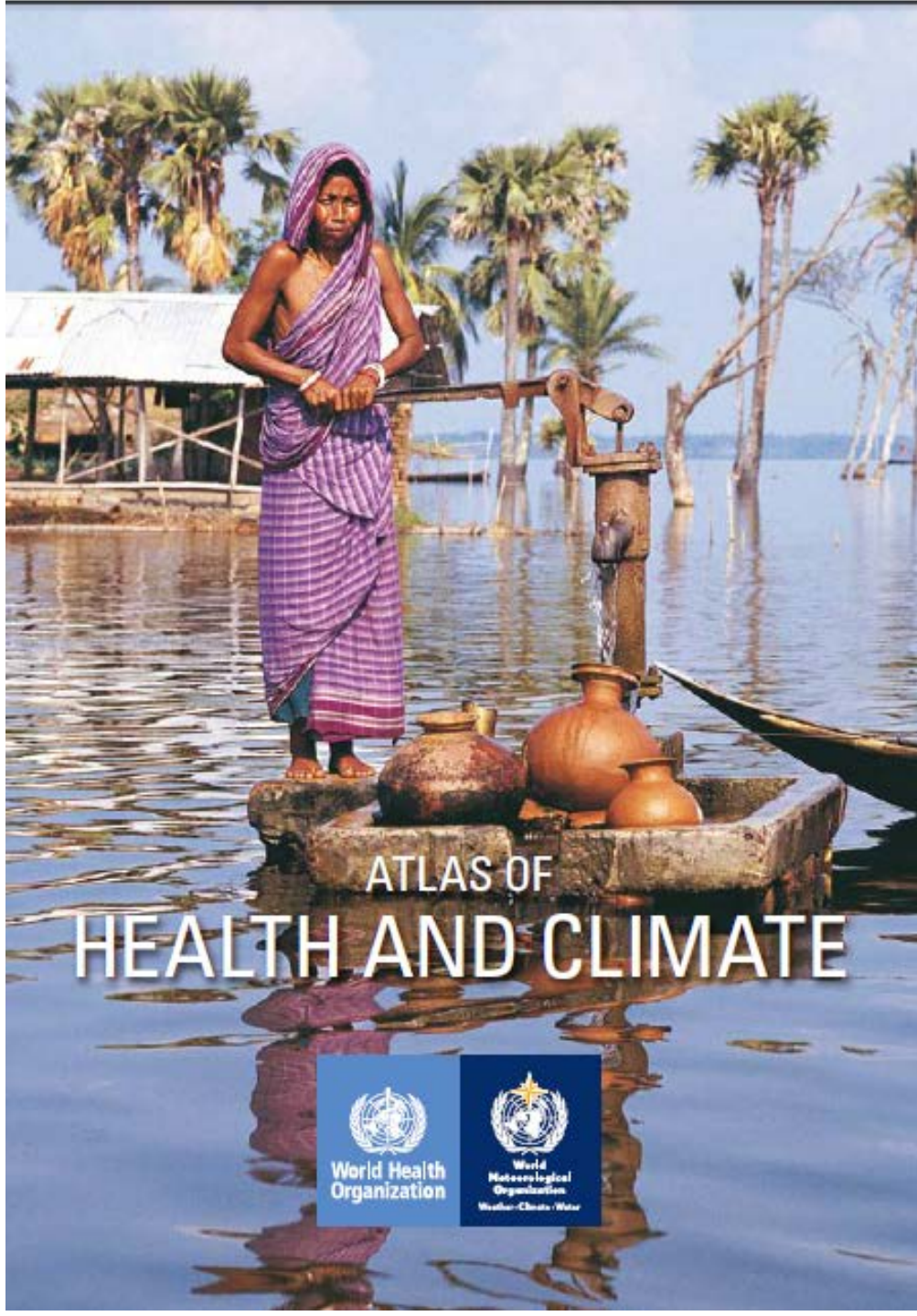


June 2018



Source: NASA GISS


Heatwaves and Health:
Guidance on
Warning-System Development
World Meteorological Organization
World Health Organization
WMO-No. 1142


ATLAS OF
HEALTH AND CLIMATE
World Health Organization
World Meteorological Organization

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WHO Europe / Public Health England

Floods: Health effects and prevention in the WHO European Region

May 2013

http://www.euro.who.int/en/health-topics/environment-and-health/Climate-change/publications/2013/floods-in-the-who-european-region-health-effects-and-their-prevention

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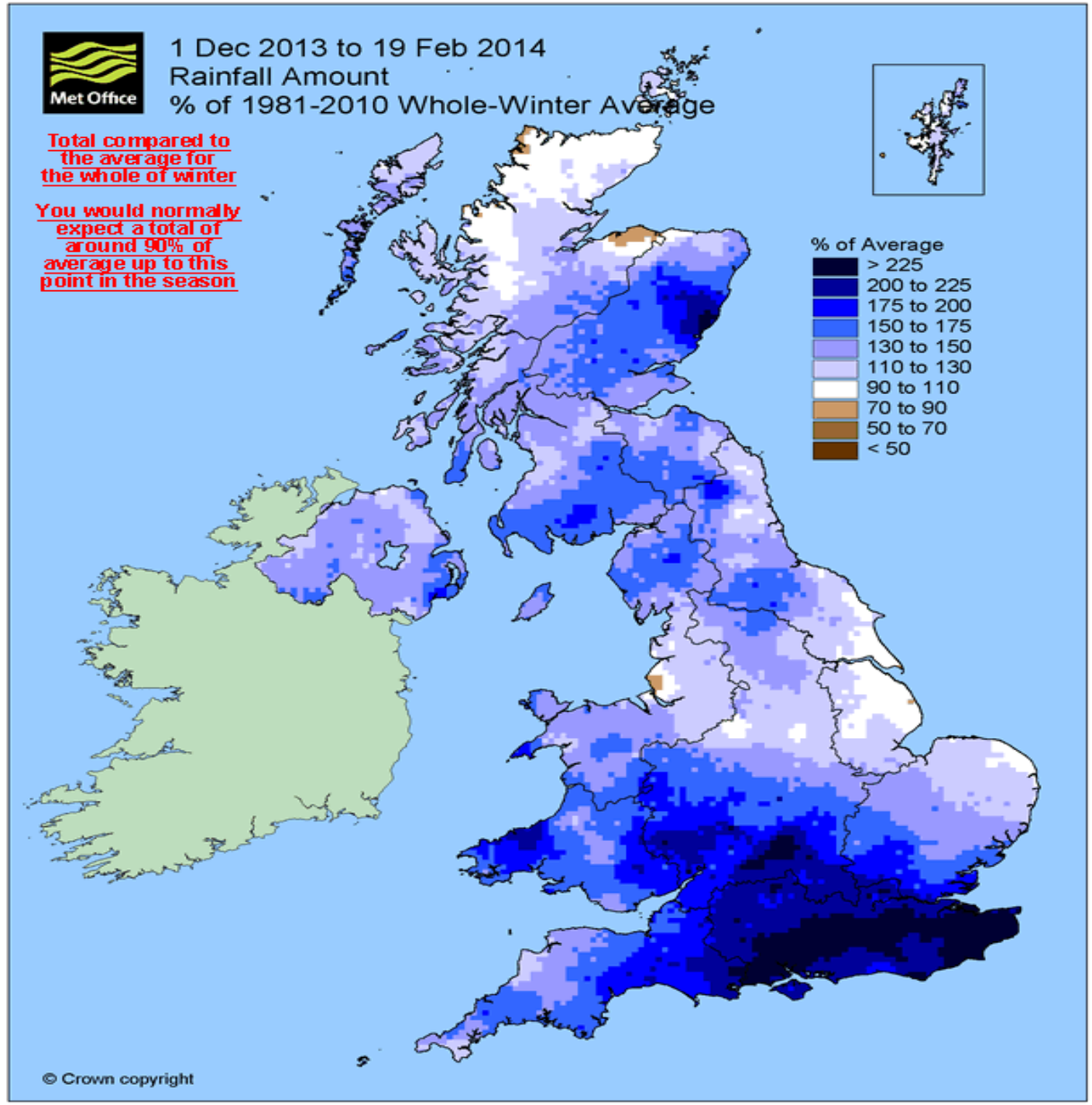
Courtesy of the Met Office

1 December 2013 - 19 February 2014



Waite et al. BMC Public Health (2017) 17:129
DOI 10.1186/s12889-016-4000-2

BMC Public Health

RESEARCH ARTICLE Open Access

The English national cohort study of flooding and health: cross-sectional analysis of mental health outcomes at year one

Thomas David Waite[1,2†], Katerina Chaintarli[3], Charles R Beck[3,4†], Angie Bone[5], Richard Amlôt[6], Sari Kovats[7], Mark Reacher[10], Ben Armstrong[7], Giovanni Leonardi[11], G. James Rubin[8] and Isabel Oliver[3,9*]

Abstract

Background: In winter 2013/14 there was widespread flooding in England. Previous studies have described an increased prevalence of psychological morbidity six months after flooding. Disruption to essential services may increase morbidity however there have been no studies examining whether those experiencing disruption but not directly flooded are affected.
The National Study of Flooding and Health was established in order to investigate the longer-term impact of flooding and related disruptions on mental health and wellbeing.

Methods: In year one we conducted a cross sectional analysis of people living in neighbourhoods affected by flooding between 1 December 2013 and 31 March 2014. 8761 households were invited to participate. Participants were categorised according to exposure as flooded, disrupted by flooding or unaffected.
We used validated instruments to screen for probable psychological morbidity, the Patient Health Questionnaire (PHQ-2), Generalised Anxiety Disorder scale (GAD-2) and Post Traumatic Stress Disorder (PTSD) checklist (PCL-6).
We calculated prevalence and odds ratios for each outcome by exposure group relative to unaffected participants, adjusting for confounders.

Results: 2126 people (23%) responded. The prevalence of psychological morbidity was elevated amongst flooded participants ([n = 622] depression 20.1%, anxiety 28.3%, PTSD 36.2%) and disrupted participants ([n = 1099] depression 9.6%, anxiety 10.7% PTSD 15.2%).
Flooding was associated with higher odds of all outcomes (adjusted odds ratios (aORs), 95% CIs for depression 5.91 (3.91–10.99), anxiety 6.50 (3.77–11.24), PTSD 7.19 (4.33–11.93)).
Flooded participants who reported domestic utilities disruption had higher odds of all outcomes than other flooded participants, (aORs, depression 6.19 (3.30–11.59), anxiety 6.64 (3.84–11.48), PTSD 7.27 (4.39–12.03) aORs without such disruption, depression, 3.14 (1.17–8.39), anxiety 3.45 (1.45–8.22), PTSD 2.90 (1.25–6.73)). Increased floodwater depth was significantly associated with higher odds of each outcome.
Disruption without flooding was associated with borderline higher odds of anxiety (aOR 1.61 (0.94–2.77)) and higher odds of PTSD 2.06 (1.27–3.33)) compared with unaffected participants. Disruption to health/social care and work/education was also associated with higher odds of psychological morbidity.

Conclusions: This study provides an insight into the impact of flooding on mental health, suggesting that the impacts of flooding are large, prolonged and extend beyond just those whose homes are flooded.

- Cohort study
- Cross sectional analysis of neighbourhoods flooded December 2013 to 31 March 2014
- Validated instruments to screen probable psychological morbidity
- Prevalence and odds rations calculated

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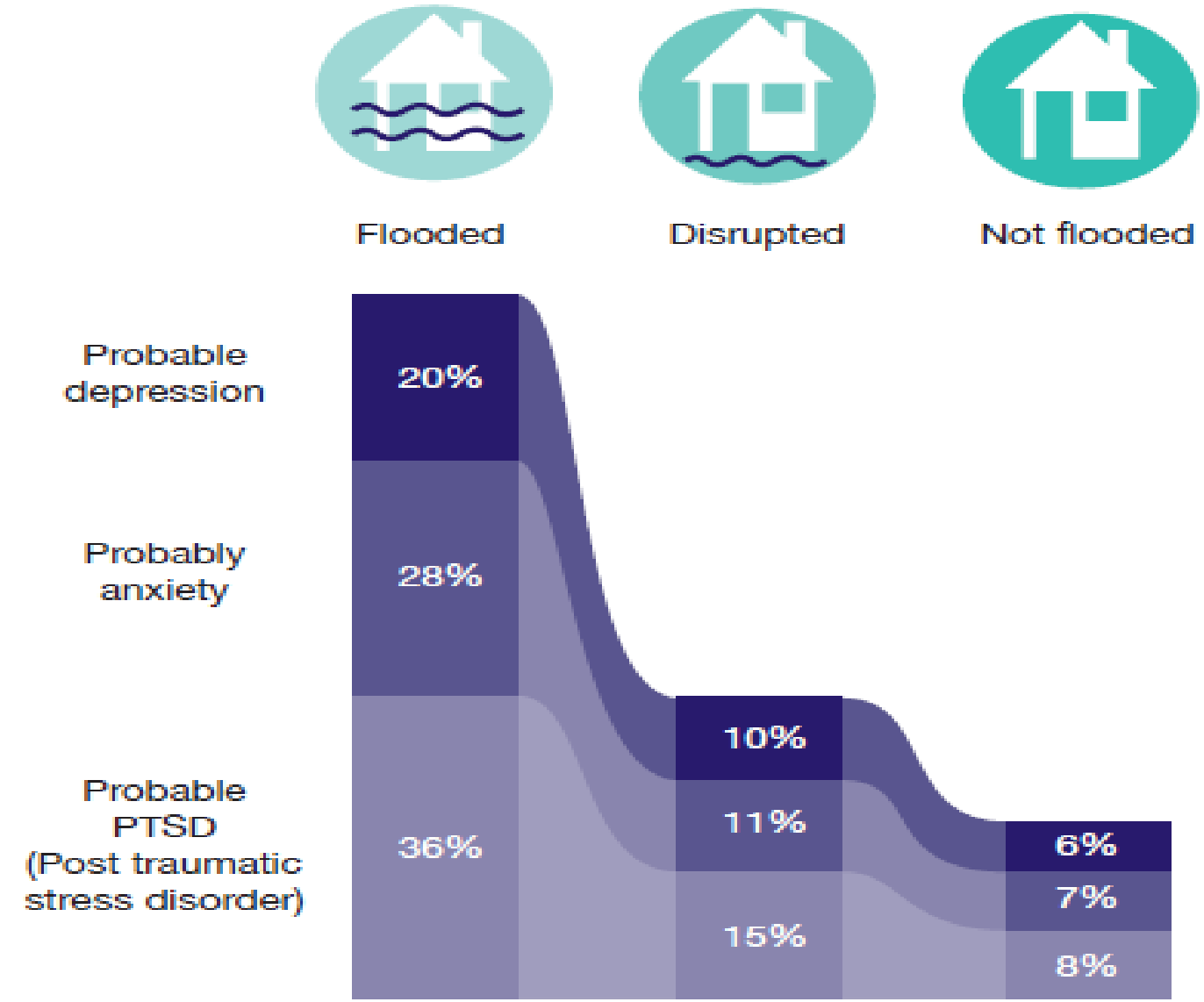
Likelihood of developing a mental health problem based on experience of flooding



Focus on climate change and mental health

The health impacts of climate change are being increasingly recognized, but mental health is often excluded from this discussion. In this issue we feature a collection of articles on climate change and mental health that highlight important directions for future research.

Loss and trauma feature prominently in media coverage of natural disasters, from forest fires to hurricanes, as affected residents experience personal injury, damage to or loss of personal property, or, in the worst scenarios, the loss of a loved one. As natural disasters increase in frequency and severity due to climate change, it is increasingly important to understand the short- and long-term impacts such experiences may be having on mental well-being, and how these could be mitigated. For instance, experiencing extreme weather events is associated with higher incidence of depression, post-traumatic stress disorder and anxiety,

instance, a recent paper reporting that warming temperature trends may be responsible for nearly 60,000 suicides in India over the past three decades[4]. Identifying the causal mechanism underlying the relationship between extreme heat and suicide within the complex, context-specific system in which this relationship is embedded is critical for developing sensible policies that protect at-risk populations in the future. But understanding the lived experiences of grief and despair that drive individuals to suicide is needed to provide coping mechanisms for those already suffering.

Rounding out the collection of pieces,

PERSPECTIVE | FOCUS
https://doi.org/10.1038/s41558-018-0102-4

nature climate change

The case for systems thinking about climate change and mental health

https://www.nature.com/articles/s41558-018-0102-4

Helen L. Berry[1]*, Thomas D. Waite[2], Keith B. G. Dear[3], Anthony G. Capon[1] and Virginia Murray[2]

It is increasingly necessary to quantify the impacts of climate change on populations, and to quantify the effectiveness of mitigation and adaptation strategies. Despite growing interest in the health effects of climate change, the relationship between mental health and climate change has received little attention in research or policy. Here, we outline current thinking about climate change and mental health, and discuss crucial limitations in modern epidemiology for examining this issue. A systems approach, complemented by a new style of research thinking and leadership, can help align the needs of this emerging field with existing and research policy agendas.

There is growing apprehension about the effects of current and future climate change on human health[1–3], with particular concern for some of the world's most vulnerable regions[4–7]. Following from unease about the general health impacts of climate change is an emerging interest in mental health specifically. affecting people in lower-income and middle-income countries[24]. Heatwaves in Adelaide, South Australia, for example, caused excess hospital admissions for psychiatric presentations[25], while hot days predicted hospitalization for self-harm[26] and even suicide[27]. A link has also been found among Indian farmers between extreme heat,

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Global Strategy for Climate Change Adaptation

- Using the Sendai Framework, climate change adaptation preparedness provides measurable opportunities **to enhance research informed capabilities to plan and prepare for, respond to, and recover from extreme events and other public health emergencies.**
- Offer **opportunities to engage at a global level with stakeholders on guidance and policy issues that could impact state and local preparedness.**