



Public Health
England

Protecting and improving the nation's health

Heatwaves, COVID-19 and summer 2020

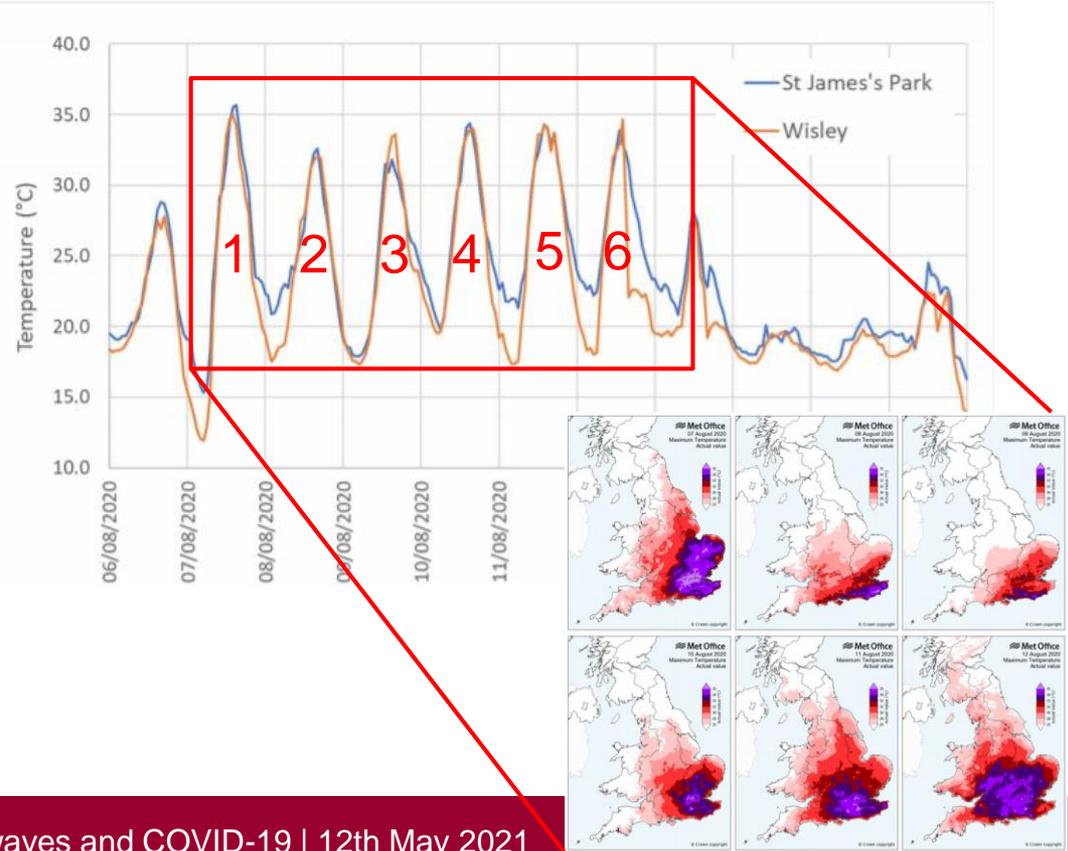
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Outline

- Reflections on summer 2020
- The health impacts of hot weather, including summer 2020
- Heatwave Plan for England – updates for 2021
- Heat-Health Alerts Service and new Extreme Heat National Severe Weather Warning Service (NSWWS)

Reflections on summer 2020

- Mixed weather overall, and only slightly warmer than average
- Three heat episodes
 - Late June
 - Late July (37.8C on 31 Jul)
 - 5-15 Aug , including.....
 - 6 days of 34C+ (7-12 Aug)
 -and 'tropical nights' 20C+



Health impacts of hot weather

Heat syncope – dizziness and fainting, due to dehydration, vasodilation, cardiovascular disease and certain medications

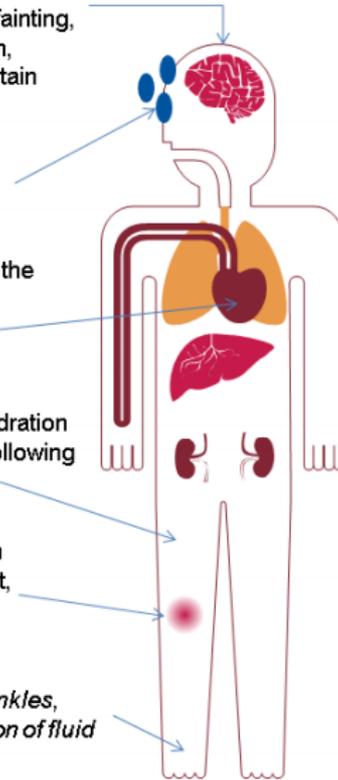
Excessive sweating can deplete fluid and salts

When blood temperature rises, the body stimulates sweat glands, dilates blood vessels and increases the heart rate

Heat cramps – caused by dehydration and loss of electrolytes, often following exercise

Increased blood flow to the skin cools the body by radiating heat, leading to heat rash (small, red itchy papules)

Heat oedema – mainly in the ankles, due to vasodilation and retention of fluid



Health effects of heat

The main causes of illness and death during a heatwave are respiratory and cardiovascular diseases. Additionally, there are specific heat-related illnesses including:

Heat Exhaustion

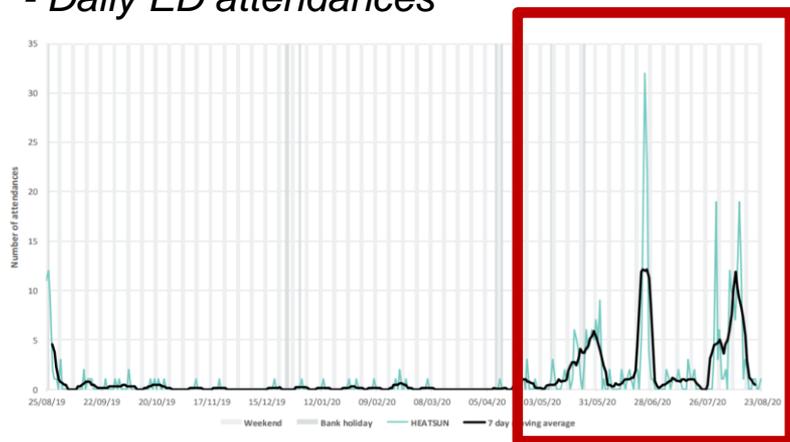
- Nausea or irritability
- Dizziness
- Muscle Cramps or weakness
- Feeling faint
- Headache
- Fatigue
- Heavy sweating
- High body temperature

Heatstroke

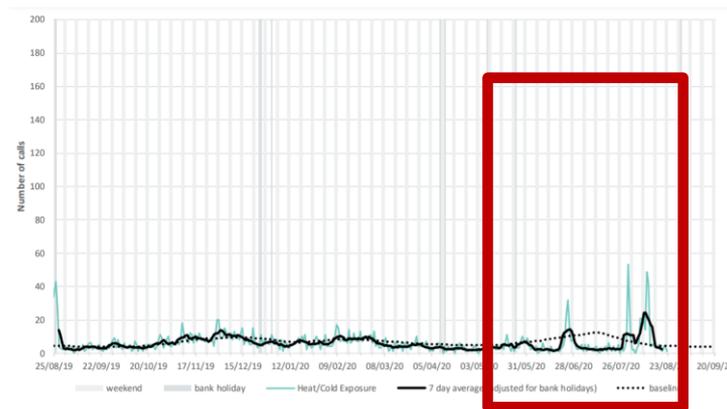
- Hot, dry skin or profuse sweating
- Confusion
- Loss of consciousness
- Seizures
- Very high body temperature

Heat-health impacts, 2020: morbidity

Emergency Department (ED) Syndromic Surveillance System – *heat stroke/exhaustion*
- *Daily ED attendances*



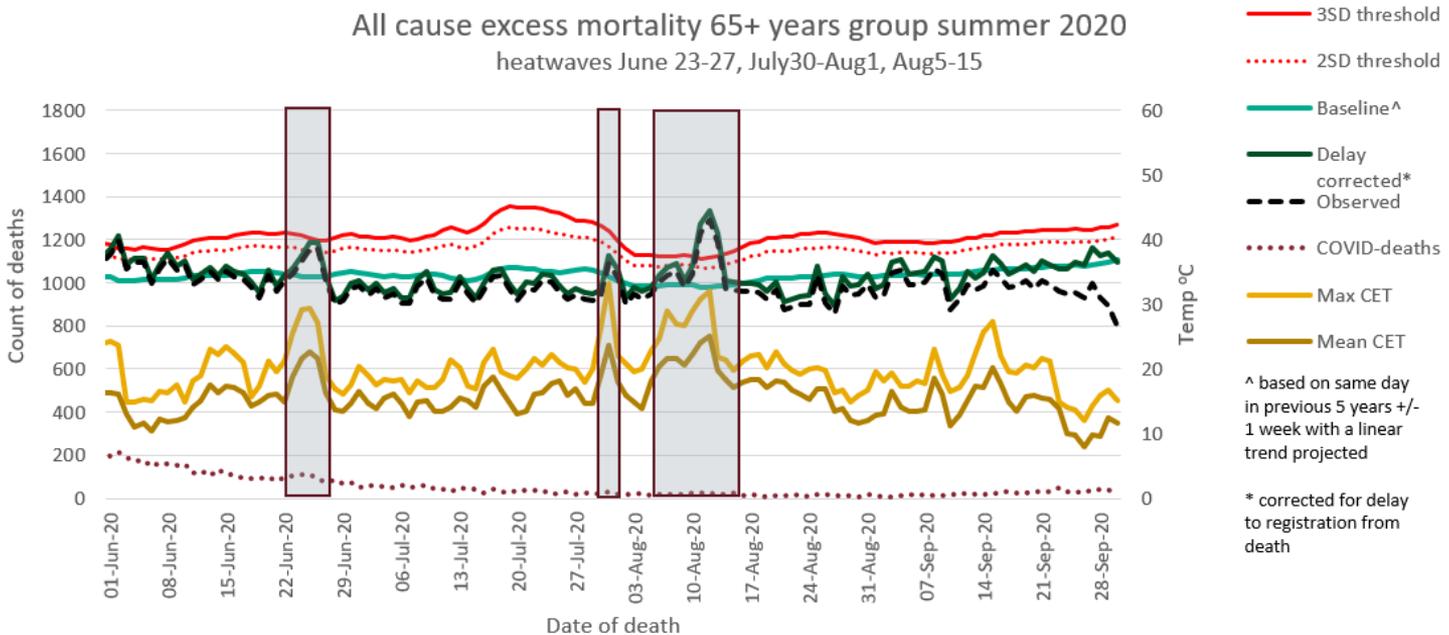
PHE National Ambulance Syndromic Surveillance System – *heat/cold impact*
- *Daily ambulance call out*



Heat-health impacts were observed across PHE Syndromic Surveillance Systems during episodes of hot weather but should be interpreted with caution due to the wider impact of the COVID-19 pandemic on the surveillance systems

Source: <https://www.gov.uk/government/publications/syndromic-surveillance-weekly-summaries-for-2020>

Heat-health impacts, 2020: mortality



The time series illustrates the very rapid increase in deaths once temperatures start to rise; therefore, the window of opportunity for preventative action is short. During each episode of heat in summer 2020, a corresponding peak can be observed in all cause mortality among the 65+ years group

Source: [Heatwave mortality monitoring report: 2020](#)

Heat-health impacts, 2020: All-cause excess mortality by age

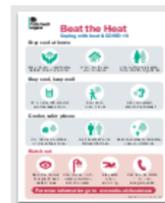
<i>Heatwave Period</i>	<i>June23-27</i>	<i>Jul30-Aug1</i>	<i>Aug5-15</i>	<i>Total</i>
<i>All</i>	576 (384-768)	246 (103-389)	1734 (1401-2066)	2556 (2139-2926)
<i>0 to 24</i>	-2 (-21-16)	6 (-9-21)	16 (-17-49)	19 (-24-55)
<i>25 to 44</i>	6 (-24-37)	-15 (-37-7)	12 (-42-67)	4 (-63-64)
<i>45 to 64</i>	27 (-41-96)	42 (-10-94)	219 (100-338)	288 (128-411)
<i>65 to 74</i>	161 (78-243)	18 (-40-76)	225 (88-361)	403 (228-554)
<i>75 to 84</i>	172 (69-274)	17 (-59-92)	479 (300-659)	668 (464-886)
<i>85+</i>	213 (96-329)	178 (89-267)	782 (578-986)	1173 (938-1421)
<i>0 to 64</i>	31 (-46-109)	33 (-26-92)	247 (113-382)	311 (126-446)
<i>65+</i>	545 (369-721)	213 (82-343)	1486 (1183-1790)	2244 (1887-2606)

2020 excess mortality – location and cause

- Significant excess mortality was observed in deaths at home and in care homes during all three heat episodes for 65+ years group. Significant excess mortality was also observed in hospitals during the first and third heatwave episodes for the 65+ years group
- Deaths at home and in hospitals increased significantly in the <65 years group during episode 3 when compared to non-heatwave days in 2020
- An impact of the COVID-19 pandemic has been a general shifting of patterns of where deaths have occurred; more deaths occurring at home when compared to previous years
- Underlying cause of death categories of circulatory deaths, respiratory deaths and Alzheimer's and Dementia deaths all observed significant excess mortality across all three heat period in the 65+ years group

Heatwave Plan for England – associated materials

- 'Beat the Heat' guidance
- Hot weather and COVID-19 slideset
- Social media assets
- Communications toolkit
- Stakeholder webinar



[Beat the Heat: coping with heat and COVID-19 \(poster\)](#)

Ref: PHE publications gateway number: GW-1289
PDF, 205KB, 1 page

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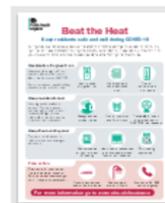


[Beat the Heat: coping with heat and COVID-19 \(leaflet\)](#)

Ref: PHE publications gateway number: GW-1289
PDF, 382KB, 15 pages

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[Beat the Heat: keep residents safe and well during COVID 19 \(poster and checklist\)](#)

Ref: PHE publications gateway number: GW-1289
PDF, 250KB, 2 pages

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Heat-Health Alerts

Figure 2.1: Heatwave Alert levels

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

LOCAL Threshold temperatures

Threshold maximum day and night temperatures defined by the Met Office National Severe Weather Warning Service (NSWWS) region are set out below.

NSWWS Region	Day	Night
London	32	18
South East	31	16
South West	30	15
Eastern	30	15
West Midlands	30	15
East Midlands	30	15
North West	30	15
Yorkshire and Humber	29	15
North East	28	15

National Severe Weather Warning Service (NSWWS)

 Met Office National Severe Weather Warning Service

 Amber warning
Extreme Heat

Between
On Issue and **23:59 Mon 12 Apr 2021**



EXERCISE EXERCISE - Increasing temperatures this week will bring potential health issues and some transport disruption.

What to expect

- EXERCISE EXERCISE. Adverse health effects are likely to be experienced by those vulnerable to extreme heat. The wider population are likely to experience some adverse health effects including sunburn, dehydration, fatigue and other heat related illnesses.
- Some changes in working practices and daily routines likely to be required. An increased chance that some heat-sensitive systems and equipment may fail, leading to power cuts and the loss of other services to some homes and businesses.
- More people are likely to visit coastal areas, lakes and rivers leading to an increased risk of water safety incidents. Some delays to road, rail and air travel are likely, with potential for welfare issues for those who experience prolonged delays.

DRAFT

Further details

High temperatures this week will reach 39 C across many parts of southern and eastern England, and 37 C across the midlands and south Wales, with minimum temperatures not falling below 20 C at night.



↑ Likelihood
→ Impact

 Medium likelihood of medium impacts

- New Met Office Extreme Heat Warning launching in June
- Designed for extreme heat episodes, such as last August.
- Focus on impacts to the general population
- AMBER and RED warnings only
- Closely coordinated with PHE Heat-Health Alerts in England

Key findings from 2020 heatwave impacts

- Summer 2020 observed the highest mortality since the introduction of the Heatwave Plan for England in 2004.
- Summer 2020 temperatures were not record breaking, however there were “tropical nights” with temperatures locally remaining above 20C
- 68% of the total heatwave excess mortality occurred during the third episode of heat (5-15th August 2020)
- The identification of place and cause of deaths permit targeted public health intervention, particularly for those unable to adapt their own behaviours or indoor environments

Acknowledgements

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