



Public Health
England

Protecting and improving the nation's health

Health impacts of extreme weather 2017-18 and what we learned

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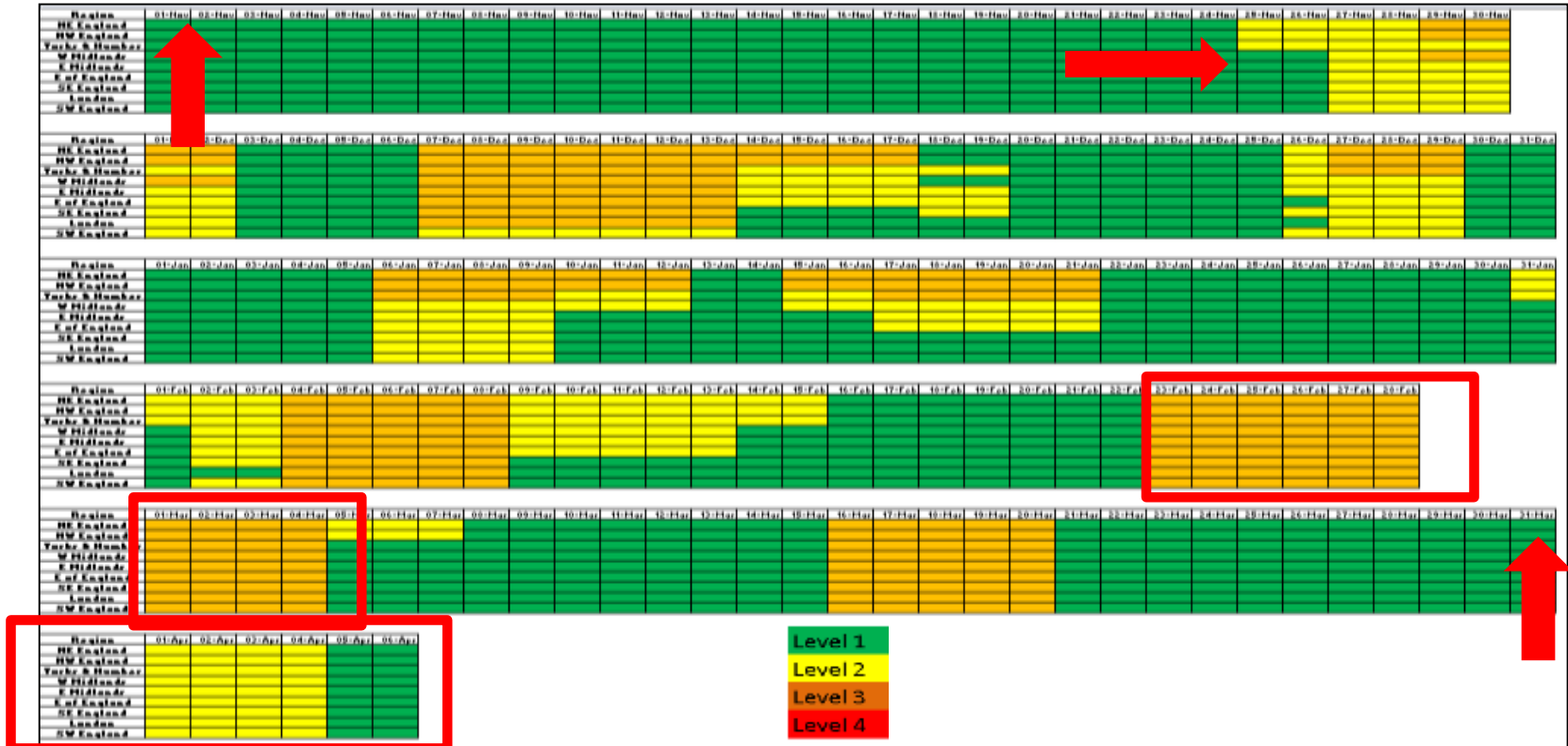
Aims

- Weather and alerts across 2017-18
- Observed health impacts
- Challenges
- What next

Winter 2017/2018



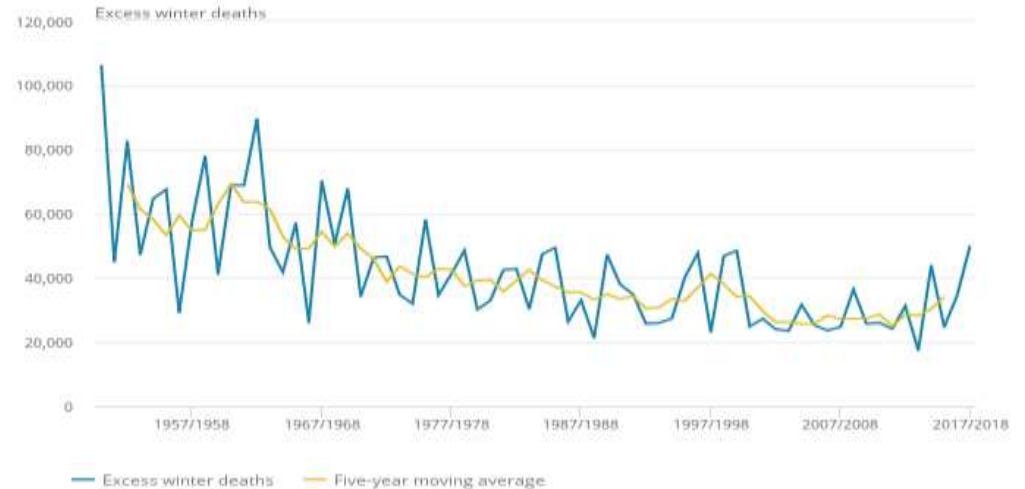
2017/18 CWA season



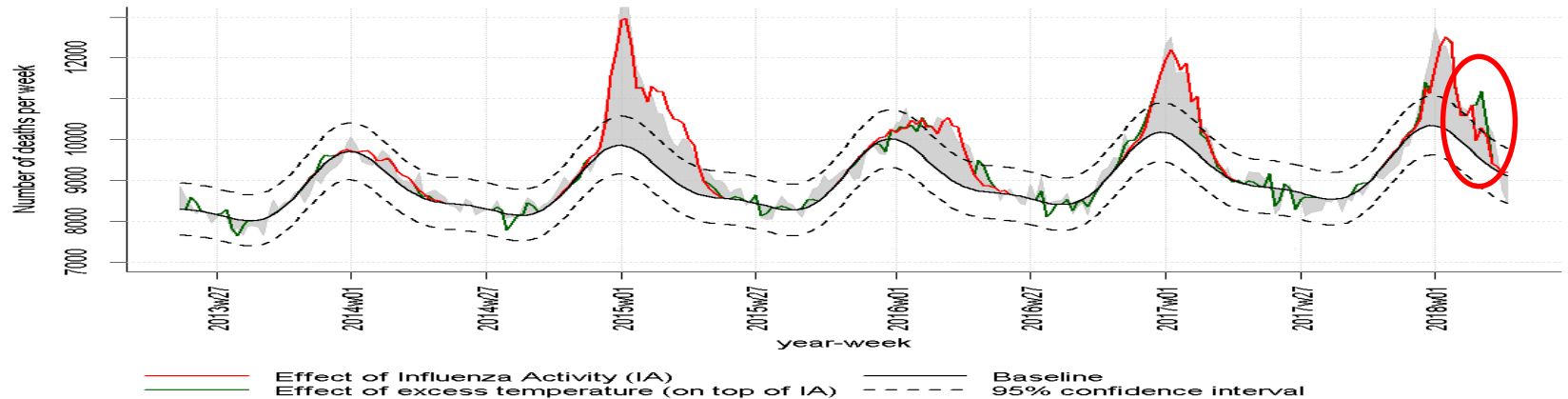
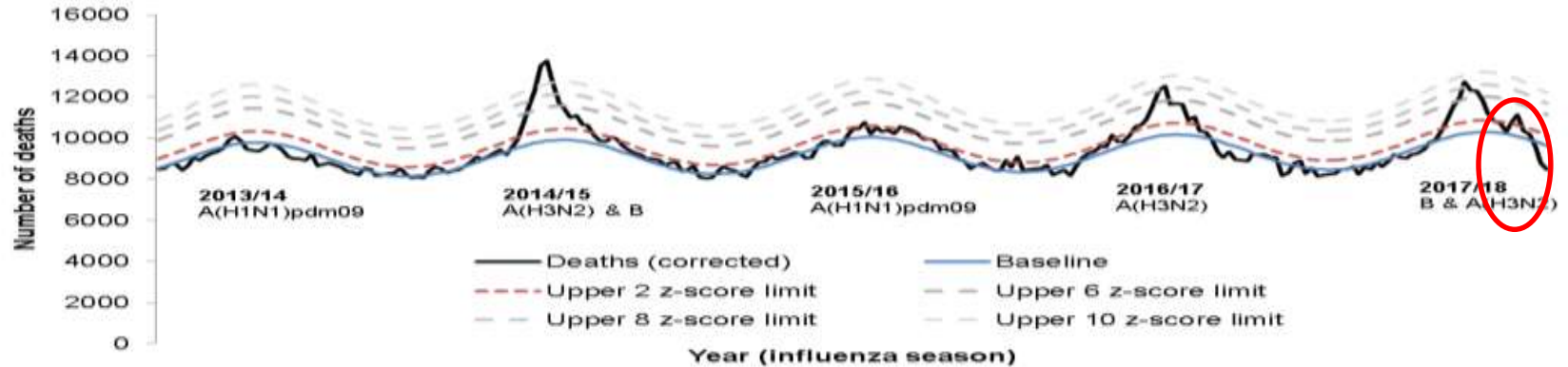
Excess winter deaths

- **EWD = winter deaths – average non winter deaths**
- **2017/18 EWD = 50,100 - Highest since 1975/76**

Figure 1: Excess winter deaths and five-year central moving average
England and Wales, between 1950 to 1951 and 2017 to 2018



Mortality – EuroMoMo and FluMoMo



Spring and Summer 2018



Health impacts of heat

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

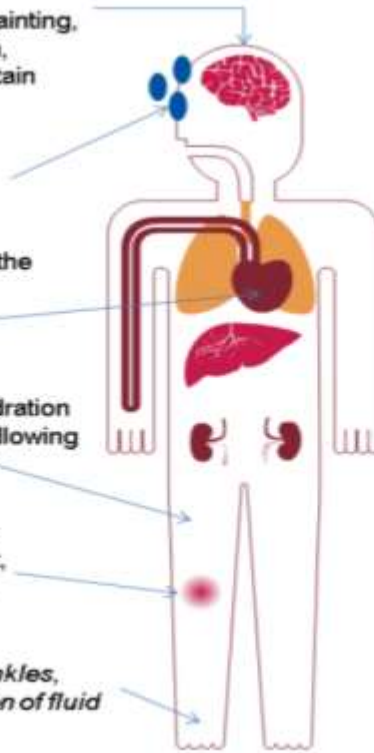
Excessive sweating can deplete fluid and salts

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

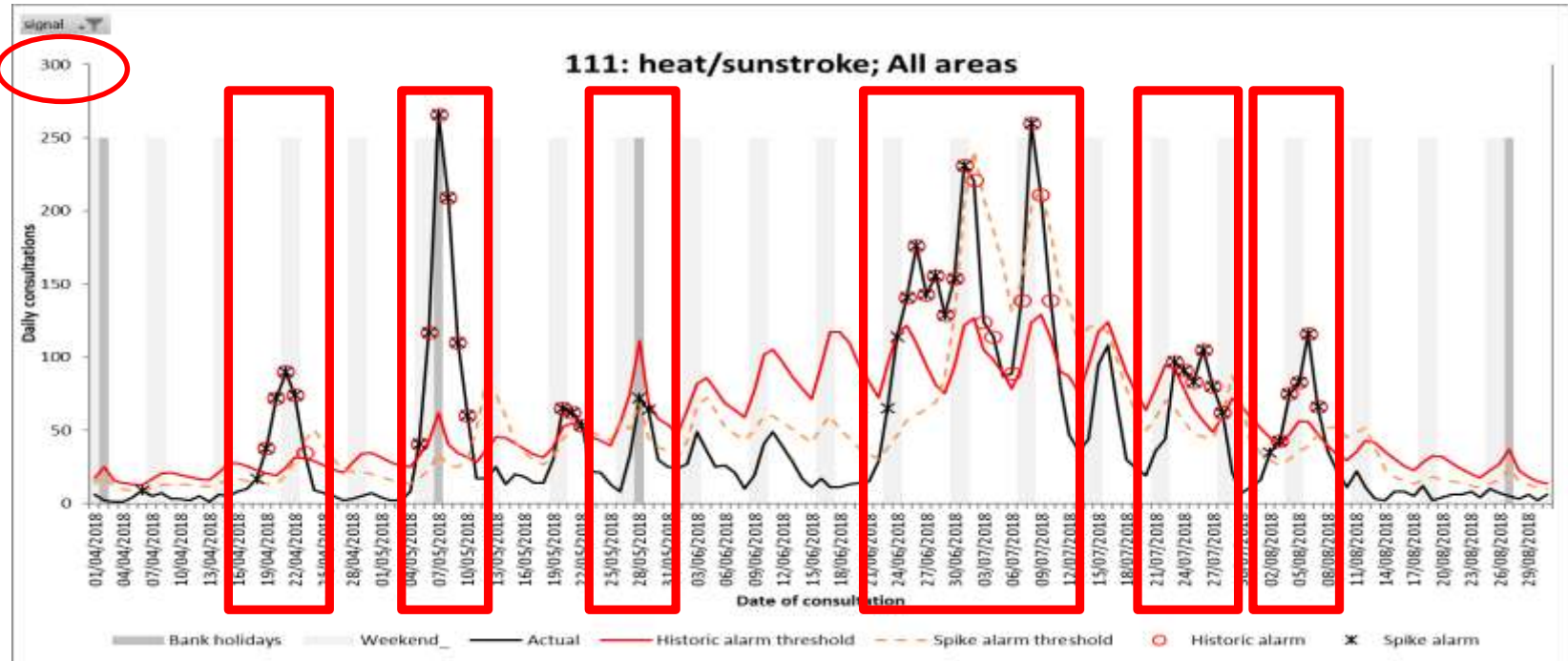
Heatstroke

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

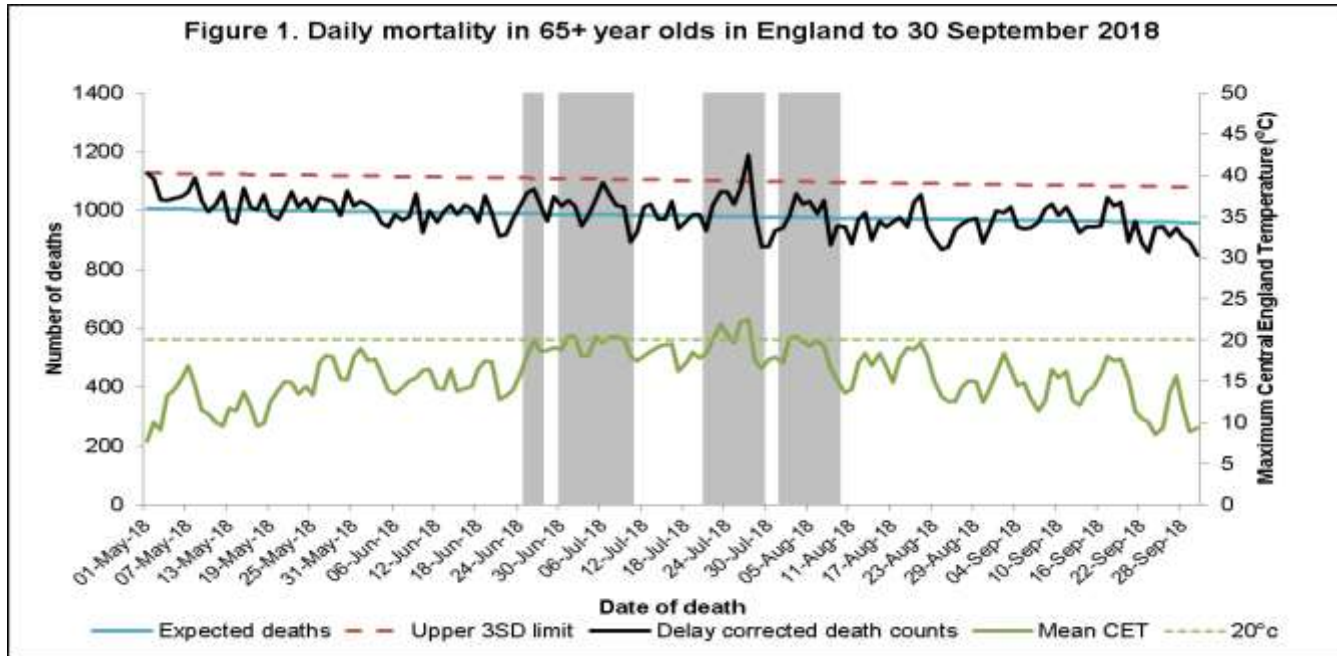
2018 Heat Health Watch alerts



Syndromic Surveillance



PHE mortality report (provisional data)



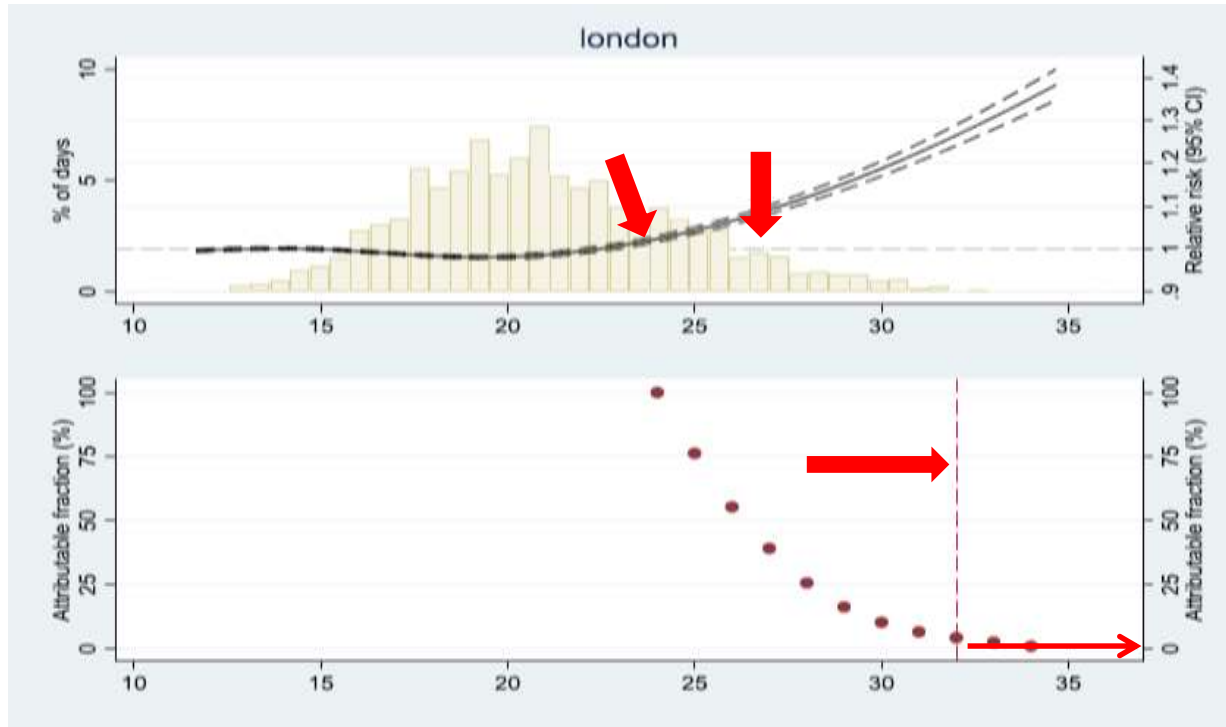
*heatwave days are highlighted in grey

PHE mortality report (provisional data)

Region	Excess number of deaths by age group (95% confidence interval)							
	Heatwave 1 (25 June to 27 June)		Heatwave 2 (30 June to 10 July)		Heatwave 3 (21 to 29 July)		Heatwave 4 (01 to 09 August)	
	0-64 year olds	65+ year olds	0-64 year olds	65+ year olds	0-64 year olds	65+ year olds	0-64 year olds	65+ year olds
North East	-3 (-15 to 9)	25 (-4 to 54)	6 (-18 to 30)	2 (-54 to 58)	21 (0 to 42)	13 (-37 to 63)	19 (-2 to 40)	-33 (-83 to 17)
North West	-2 (-22 to 18)	36 (-11 to 83)	32 (-6 to 70)	30 (-60 to 120)	-5 (-40 to 30)	-33 (-115 to 49)	-6 (-41 to 29)	-51 (-133 to 31)
Yorkshire and the Humber	3 (-14 to 20)	18 (-22 to 58)	9 (-23 to 41)	-21 (-97 to 55)	1 (-28 to 30)	18 (-4 to 40)	3 (-26 to 32)	10 (-59 to 79)
East Midlands	4 (-11 to 19)	27 (-13 to 67)	17 (-12 to 46)	-30 (-106 to 46)	11 (-15 to 37)	52 (-17 to 121)	12 (-14 to 38)	6 (-63 to 75)
West Midlands	2 (-15 to 19)	51 (5 to 97)	1 (-32 to 34)	47 (-41 to 135)	-12 (-42 to 18)	14 (-65 to 93)	-5 (-35 to 25)	-3 (-82 to 76)
East of England	14 (-3 to 31)	-19 (-68 to 30)	-21 (-53 to 11)	-29 (-122 to 64)	11 (-18 to 40)	67 (-16 to 150)	9 (-20 to 38)	60 (-22 to 142)
London	-10 (-28 to 8)	8 (-32 to 48)	9 (-26 to 44)	128 (51 to 205)	30 (-2 to 62)	165 (95 to 235)	10 (-22 to 42)	128 (58 to 198)
South East	-1 (-34 to 32)	25 (-31 to 81)	11 (-51 to 73)	107 (-1 to 215)	-15 (-71 to 41)	86 (-11 to 183)	2 (-54 to 58)	9 (-88 to 106)
South West	14 (-2 to 30)	17 (-28 to 62)	7 (-23 to 37)	32 (-54 to 118)	2 (-25 to 29)	26 (-51 to 103)	19 (-8 to 46)	-22 (-99 to 55)
England	22 (-35 to 79)	188 (51 to 325)	71 (-39 to 181)	266 (4 to 528)	46 (-53 to 145)	409 (172 to 646)	61 (-38 to 160)	104 (-133 to 341)

* Statistically significant values are marked in bold

Heat-attributable deaths



Source: PIRU Evaluation of the implementation and health-related impacts of the Heatwave Plan for England (DRAFT) Final report (2019)

Conclusions

- Need to shift from an emergency response focus to dealing with heat and cold related health impacts
- Move to a year round strategic preventative approach
- We need to explore system working to address these risks e.g. urban planning, housing design and existing priorities