Setting operational thresholds for Heat Early Warning Systems
Lecture 2 – Data considerations
Ross Thompson
June 02, 2020 – GHHIN Masterclass series
Overview

• Understanding temperature and heath impact relationships

• Impacts and data availability
  • Mortality
  • Morbidity
  • External factors & subjective impacts

• Exposure metrics

• Spatial resolution
Heatwave mortality Summer 2019 - England

Emergency admissions – England 2019

Source: Public Health England, Emergency department syndromic surveillance system
Temperature Mortality/morbidity relationship

Mortality


Morbidity

Source: Contrasting patterns of mortality and hospital admissions during hot weather and heat waves in Greater London, UK, Kovats et al, 2000
Impact data for consideration - mortality

What data is available, and how useful will it be?

- Linear or non-linear temperature mortality relationships
- Night time temperatures
- Age adjusted
- Seasonal thresholds

Impact data for consideration - morbidity

What data is available, and how useful will it be?

• Emergency admissions
• Primary health care usage
• Ambulance call out
• Mental health services use
• Other data sets available?

Source: Contrasting patterns of mortality and hospital admissions during hot weather and heat waves in Greater London, UK, Kovats et al, 2000
Impact data for consideration – external/subjective

- Time of year/season?
- Episode length
- Other met factors (e.g. blocking/inversion systems etc)
- Concurrent hazards (e.g. AQ, water shortages, wild fires, flooding etc)
- % geographic area breaching thresholds or affected
- Public events
- Other public health issues (e.g. COVID-19, health and social care capacity to cope with heat)
Exposures

• Air Temperature – Tmax, Tmin or Tave

• Temperature & humidity index – e.g. humidex

• “Feels” like temperature
Geographic resolution

Contours

Administrative boundaries

Regions

Sustainable Transformation Partnerships
Summary

Data availability is key consideration for both exposure and health impacts.

There are other issues that are also important that may influence both impact and exposure that need to be considered, but these may not fall within data sets.

Just because data may be available, it may not provide you with the information you need.

All the above will depend on what the main aim of the system is.