

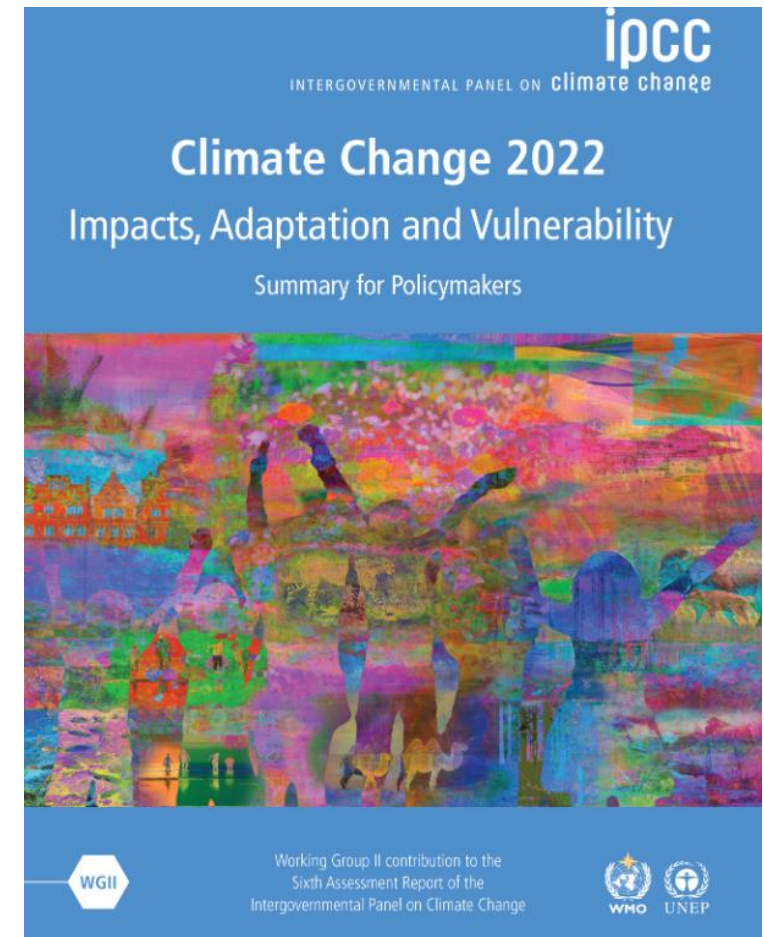
Health policy implications of climate change.

Christopher Whitty

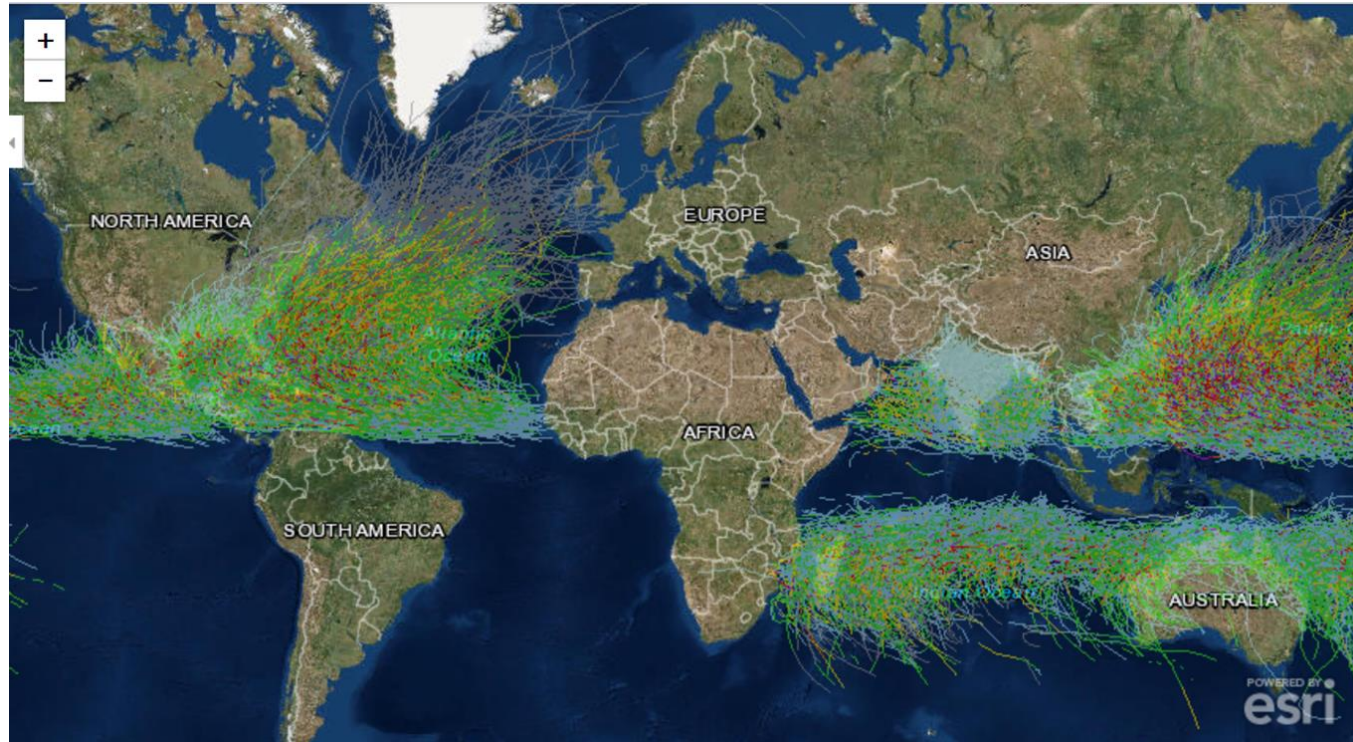
Foundation for Science and Technology 2022

It is widely accepted climate change is one of the greatest threats to human health.

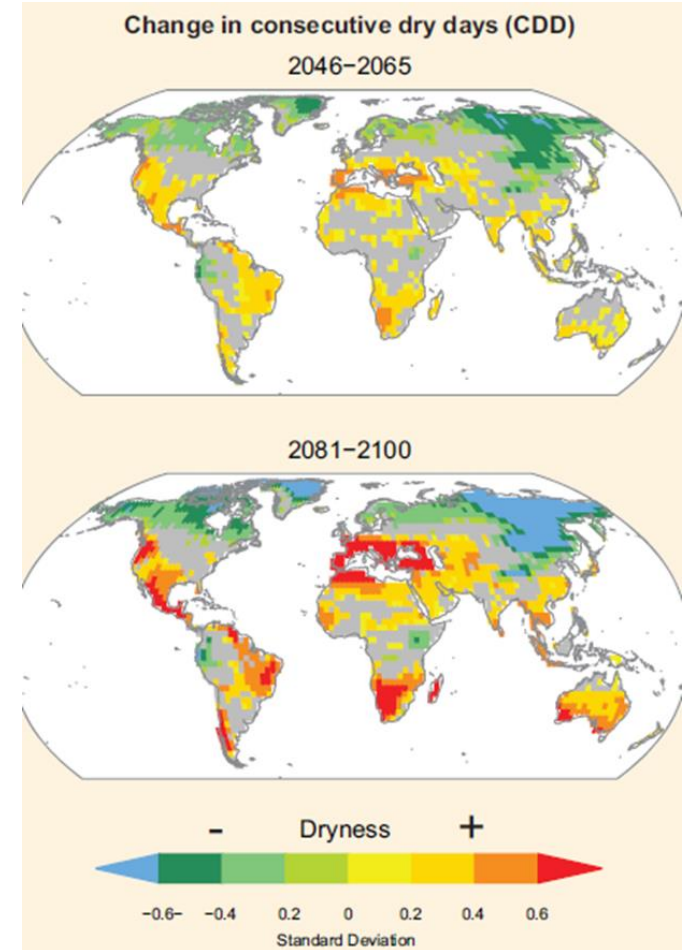
- In the short-medium term many pressing health challenges.
- In the long term WHO and most other health bodies consider climate change is one of the greatest threats to health.
- Many major health challenges can be changed or reversed in relatively short timescales. Climate change effects cannot.
- Area under the curve therefore very large.



The negative effects of climate change on health are not distributed evenly globally.



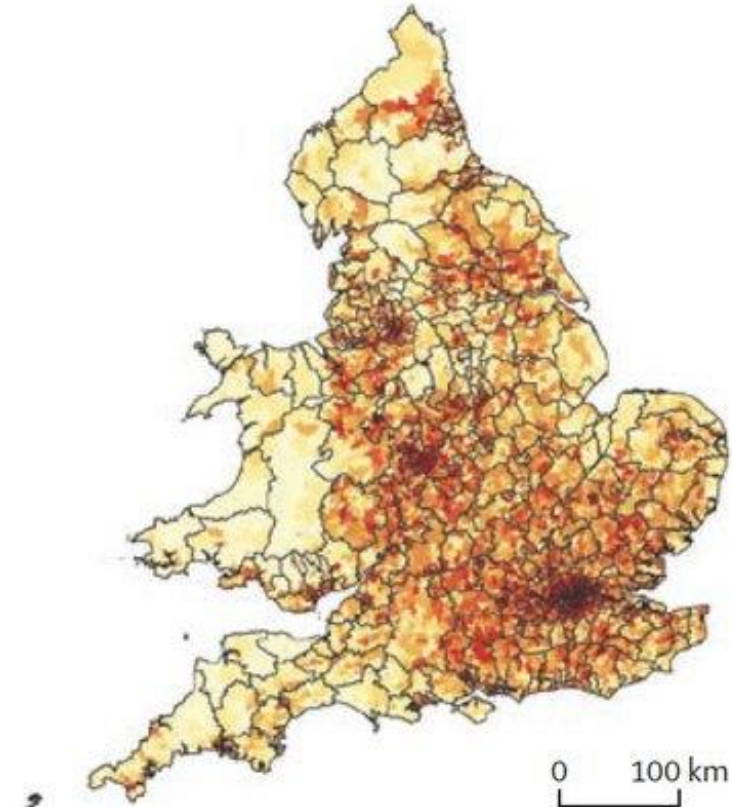
Above: hurricanes/typhoons 1816-2015 NOAA
Right: consecutive dry days 2046-2100. IPCC.



Effects of climate change in the UK and Europe on health include:

- Direct; heat stress, flooding.
- Indirect health; vector borne diseases including mosquito, tick.
- Indirect; water systems.
- Indirect health; agricultural including animal and plant health leading to food insecurity.
- Indirect; global impacts on socioeconomic development.
- Most are an even greater risk in Africa, Asia and Latin America.

England and Wales



Gasparri A et al. Lancet Plan Health 2022.
Heat-related excess mortality / 100,000

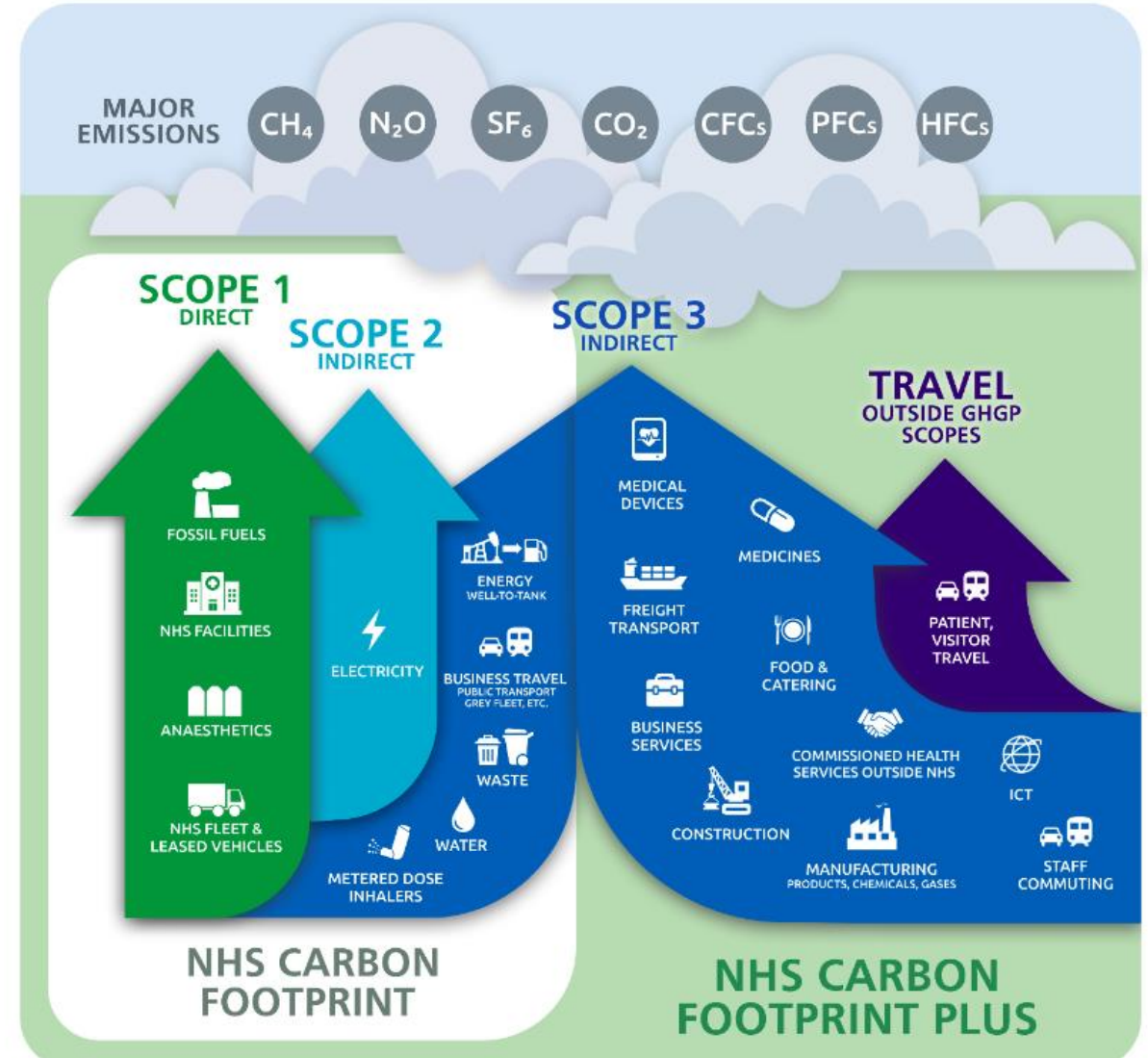
Policy responses in, or with an impact on, health.

- Get healthcare as close to net zero for carbon and other greenhouse gasses as possible. It is a significant contributor.
- Promote policies that have co-benefits between mitigation and health outcomes.
- Find medical countermeasures for diseases and conditions which will increase with climate change.
- Be honest about tradeoffs, seek to minimise them.



Healthcare and net zero. Some examples.

- Construction.
- Heating. Hospitals and clinics have to be warm enough- and also well ventilated.
- Healthcare uses large quantities of disposables, in part for infection prevention.
- NHS transport fleets.
- Specialist areas: anaesthetic gasses such as desflurane 2% of NHS emissions; inhalers.



Promoting policies with co-benefits.

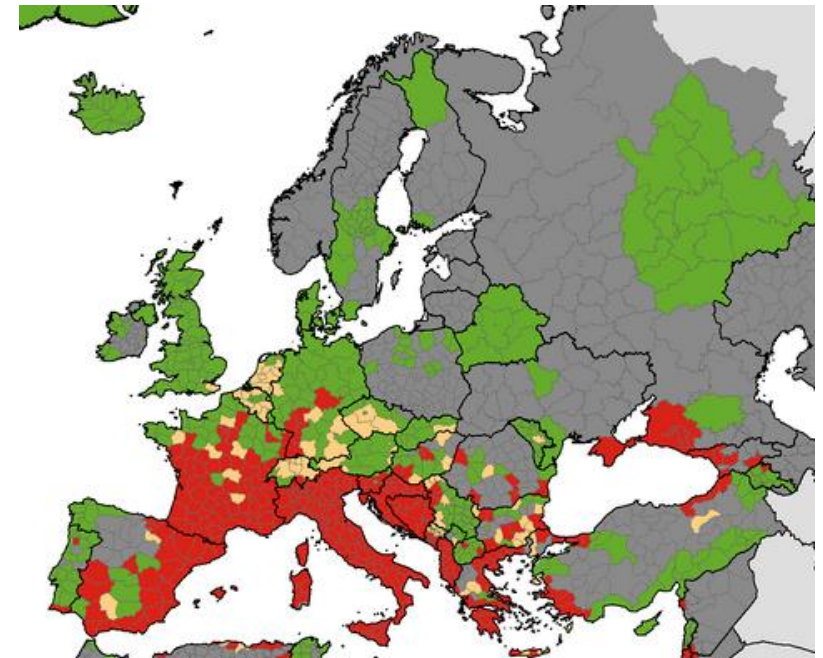
- Some are clear win-win. Promoting active travel (walking, cycling) good across multiple health conditions. Loft insulation reduces effects of cold on health.
- Some more nuanced including air pollution.
 - Switch to electric cars reducing tailpipe emissions. Co-benefit.
 - Reducing carbon use in industry. Co-benefit.
 - Switch from petrol to diesel- tension between aims.
 - Use of renewable wood for space heating- tension between aims.



Department for Transport

Science and engineering to reduce (but not eliminate) health impacts of climate change. Many sciences needed.

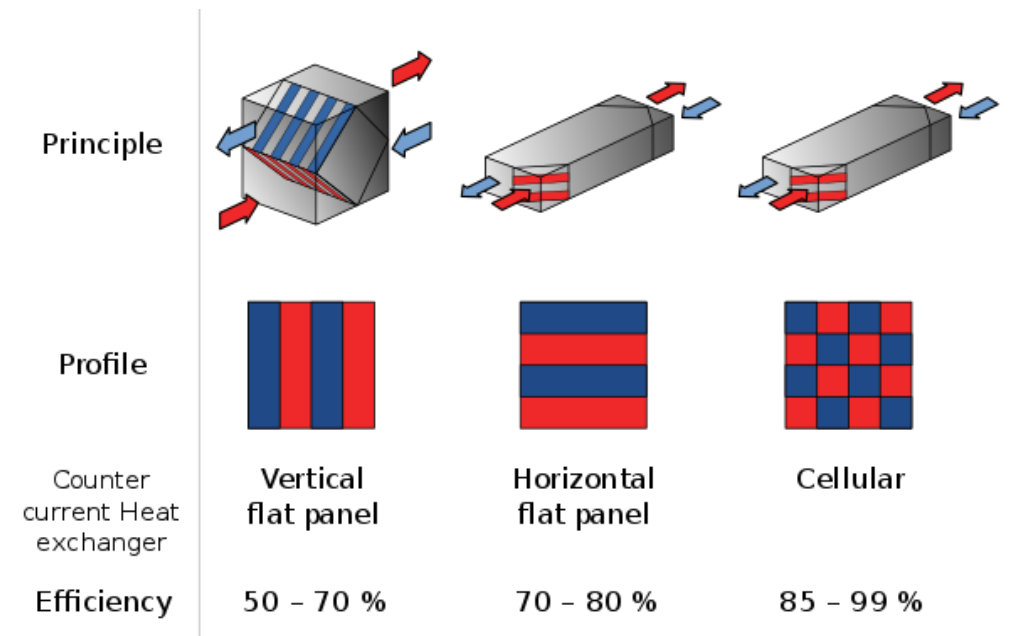
- Already seeing an increase in range of important vectors like *Aedes* mosquitoes (dengue, Zika, Yellow Fever, Chikungunya).
- Medical countermeasures to the diseases can be developed and deployed.
- Engineering to reduce health impact of greater heat stress and flooding.
- Drought and flood resistant crops to minimise increased food insecurity.



Aedes albopictus in Europe.
March 2022. ECDC

Being honest with ourselves in identifying policy tensions essential. Only then can we mitigate them.

- We have to tackle greenhouse gas emissions as fast as possible. This is essential to prevent irreversible health harms of climate change.
- Some of the actions we need to take could may come with health disbenefits in the short term.
- Many of these can be mitigated by science or engineering- but only if identified as early as possible.
- An example- tension between heat efficiency and ventilation.



Cross-plate heat exchanger. Wiki.

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