

Health effects of climate change

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Outline

- Predicting what might happen
- Potential health effects
 - Positive
 - Negative
- Public health action
 - Surveillance
 - Intervention

Predicting health effects

- Complex
- Spatial analogues
- Predictive modelling
- Expert judgement

Role of surveillance

- Spot health impacts early
- Predict trends
- Design interventions
 - Public health education
 - Vaccination/prophylaxis
- Monitor impact of interventions

Spotting climate related changes in health

- Sensitivity of response
- Threshold
- “Incubation period”

Milder winters

- Reduced hospital admissions
- Reduced mortality

Reduced winter deaths

- 20,000-50,000 excess deaths in winter
- Seasonal excess of deaths highest in Europe
- Elderly most at risk
- Decline already started (flu vaccine/campaigns)
- 2-3% reduction in winter deaths with 2-2.5 C increase in temperature (2050)

Impact of hot summers

Increased Heat related deaths

- Hot weather increase daily mortality
- Heat associated with air pollution
- Estimate 253% increase = ~2000 deaths
- Elderly particularly vulnerable
 - >80 years
 - Bedridden
 - Heart disease
 - Diabetes

2050 estimates of effect on deaths and hospital admissions (DoH)

- Summer
- ~2000 extra deaths
- 204×10^3 extra admissions
- Winter
- 20,292 fewer deaths
- 7070×10^3 fewer cold related admissions

Infectious diseases

- Food poisoning
- Water borne disease
- Malaria
- Tick borne disease

Food poisoning 94,000 cases p.a.

- Temperature rise $^{\circ}\text{C}$
- +1
- +2
- +3
- Increased cases
- 4,000
- 9,000
- 14,000

Infectious diseases

- Changes in latitude/altitude
 - Malaria in Ethiopia
 - Tick borne disease in Sweden

Potential benefits of warmer weather

Increased physical recreation

- Increased fitness
- Reduced obesity

Potential health benefits

- Five-a-day – greater choice of fruit and vegetables
- 20% increase in production

Ozone depletion and UV exposure

Scylla and Charybdis

South West data

- Incidence of melanoma increased 3-7% since 1960s
- Latent period to see effect
- Latitude 45 degrees increase seen third quarter of 21st Century
- 2000 per million up by 100



Possible beneficial effects of UV exposure

- Vitamin D protective
 - Rickets
 - Osteomalacia/fractures
 - Cancer*
 - Heart attacks*
 - Multiple sclerosis*

» * evidence controversial

Public health intervention

- Awareness of need to avoid excess sun exposure (BMJ article)

Acute severe weather conditions

Health risks from severe weather conditions

- Road traffic accidents
- Being blown over
- Building collapse
- Importance of staying inside

Cross Government working

- Perceived risk to health seems to be a major factor determining whether or not individuals will take environmental action.
- Would a message on combined climate/health benefits work?

Secondary effects

- Other modes of transport
 - Decreased RTAs
 - Fitter, slimmer population
 - Decreased risk of heart diseases

Benefits of cycling

- e.g. London

A 10% shift from cars to cycling and walking could save 100 deaths and 1,000 hospital admissions in London each year.

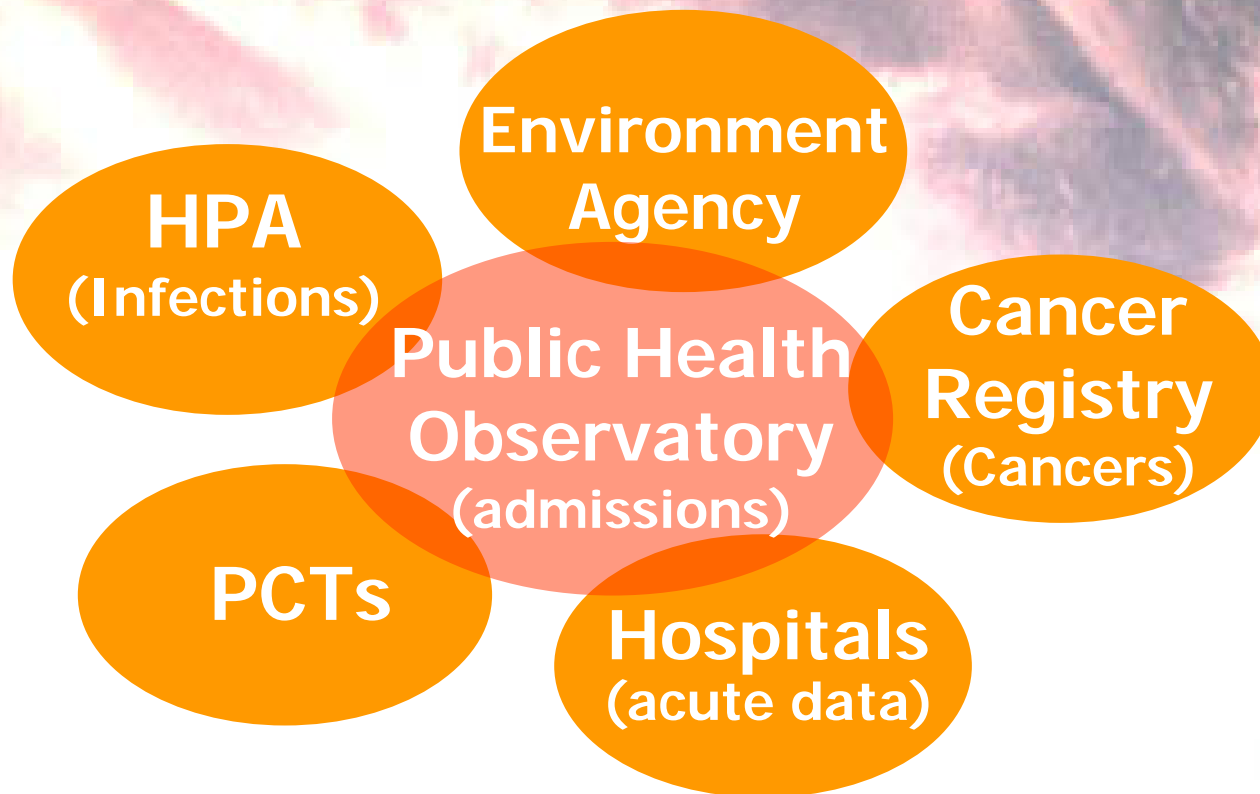
Fuel poverty

- Home Energy Efficiency Scheme etc
- Impact on climate change cost-effective vs transport

Public health interventions

- Increased surveillance
- Health impact assessments to identify vulnerability of populations and subgroups
- Adaptation strategies: special attention to vulnerable groups
- Interdisciplinary research

Public health action now: ensure co-ordinated surveillance



Public health action now

- Raise awareness of health implications of climate change
- Raise awareness of potential health benefits of action to reduce impact of climate change
- Keep pressure up on NHS