

PREVENTING HARM

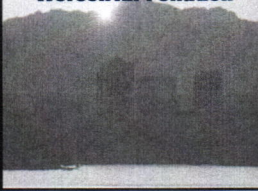

Potential Directions for a Healthier Future

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Climate Change Adaptation an opportunity to nurture resilient Communities

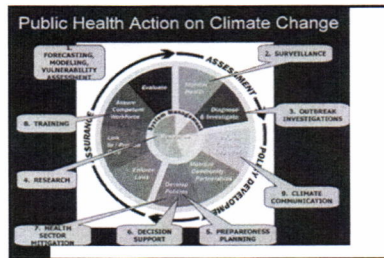

Rising Temperatures Worsen Air Pollution


The Precautionary Principle

The Wingspread Statement


"When an activity raises threats of harm to human health or the environment, *precautionary measures should be taken* even if some cause and effect relationships are not fully established scientifically."

Health Effects of PM

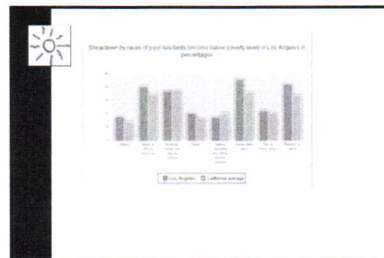



- Increases asthma attacks (Harvard Six Cities Studies)
- Aggravates bronchitis (McConnell et al 1999)
- Slows lung growth in children (Gauderman et al 2000, 2002)
- Lower birth weight and increased number of premature births (Ritz et al 2001, 2002)
- Contributes to premature deaths (Pope et al 2002)




"The Stone Age did not end because we ran out of stones; the Oil Age will not end because the world runs out of oil."

Don Huberts- Shell H₂ CEO
Sheik Yamani- ex Saudi Oil minister
Geoffrey Ballard- fuel cell pioneer

Reproductive Health




Hispanic, African-American, and Asian/Pacific Islander mothers experienced higher mean levels of air pollution and were more than twice as likely to live in the most polluted counties compared with white mothers after controlling for maternal risk factors, region, and educational status

PSA-LA 2007

Declining Reproductive Health
Low Birth Weight

- The number of infants born with low birth weight (under 6.6 lbs) increased almost 1% from 1994-2004. (Center for Disease Control)
- African American low birth weights are rising faster and remain significantly higher.

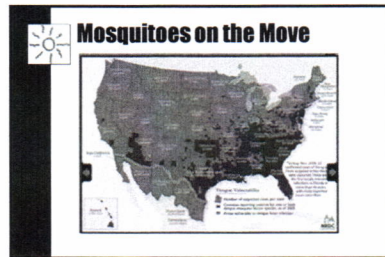


PR-1A 2009 11

Dengue/ Dengue Hemorrhagic Fever (DHF)

- Caused by one of four distinct virus strains
- No vaccine or treatment available
- DHF average case fatality rate: 5%
- Estimated 50 to 100 million cases each year of dengue, several hundred thousand cases of DHF
- Spread by *Aedes* mosquito; *Ae. aegypti* does not survive below 50 °F (10 °C), epidemic transmission unlikely below 68 °F (20 °C)
- Range is expanding

WHO, *Climate Change and Human Health*, 88-90

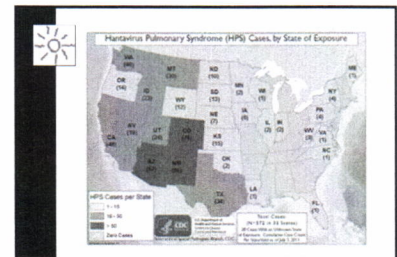
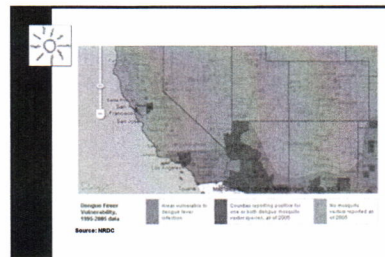


Hantavirus Pulmonary Syndrome

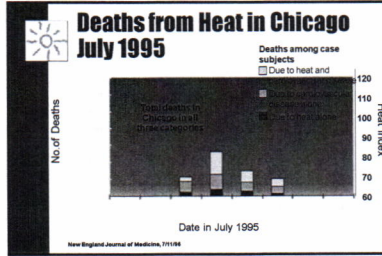
- First emerged in U.S. in 1993
- Nearly half (42%) of all cases reported fatal
- Deer mouse- main carrier of the disease in US spread by contact with rodent droppings, urine, or saliva
- "Sequential extremes:" Disease emerged after floods increased rodent food supply. Boom in population drove rodents closer to human habitations. Subsequent drought may have helped by killing predators.

Emerging Infectious Diseases 1999; 5(1):87-94

Infectious Diseases



Heat



Southern California Wild Fires

- Wildfires are common in Southern California
 - Characteristic of the area since prehistoric times
 - Santa Ana winds may drive heat waves, prolong wildfires, and prevent wildfire control in this region
- Climate models predict the summer months will be longer, and hotter, due to global warming
- Result: dry soil and vegetation become fuel for wildfires

Heat-Related Illness and Death

- Heat cramps; Heat exhaustion; Heat stroke
- Aggravates pre-existing cardiovascular disease
- Elderly, children, chronically ill, urban poor are especially vulnerable

Heat Waves: Vulnerable Populations

- Greater risk for people who do not have access to air conditioning
 - May not be able to afford air conditioning
 - For populations unaccustomed to heat waves, people may have air conditioning but chose not to use it, not realizing danger
 - Elderly living in isolation
- vulnerable populations during heat waves:
 - Elderly
 - The poor
 - Outdoor workers, gardeners, day laborers, farm workers

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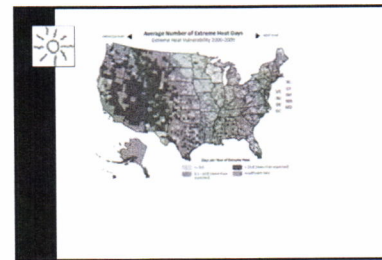
Drought and water bourn disease

Health Impacts of Heat Waves

- Los Angeles projected to have an increase of 62% - 88% in heat-related mortality by 2080
- Health impacts likely to be seen 1 to 3 days after the onset of the heat waves
- Health effects of extreme and prolonged heat exposure include: heat cramps, heat exhaustion, heat stroke, heat syncope (fainting)
- Devastating heat waves seen elsewhere recently
 - 5-day heat wave in Chicago in 1995: 700 excess deaths, most attributed to the heat
 - August 2003 European heat wave: 35,000 excess deaths

Source: Presentation by Jonathan Pflieger, LA DHS 2008

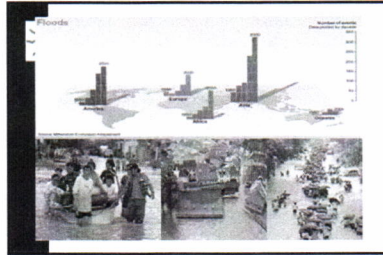
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Warmer Surface Sea Temperatures

Potential increase in:

- Harmful algal blooms (red tides)
- Cholera
- Shellfish poisoning and other water-borne diseases



Climate Change Adaptation an opportunity to nurture resilient Communities

- Promote resilience and capacity to prepare for changing climate conditions and extreme weather events
- Ensure that policies on climate change mitigation and adaptation promote social equity




- Be mindful and avoid unintended consequences of climate policies
- Increase in other pollutants from a cap and trade program ?
- Displacement and gentrification as a result of smart growth and in fill policies and transit orientated development ?



Promising practices

Kitchen Divas



“Two roads diverged in a wood, and I-- I took the one less traveled by, and that has made all the difference.”

-Robert Frost

