Climate Change:
Implications for Health Services in South Africa

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“Climate change is the greatest global health threat of the 21st century”

University College of London/Lancet Commission on Climate Change
“……climate change can be expected to cause an additional 250,000 deaths yearly by 2030…”

WHO, 2015
• the following additional deaths are projected for the year 2030:
  – 38 000 due to heat exposure in elderly people,
  – 48 000 due to diarrhoea,
  – 60 000 due to malaria,
  – 95 000 due to childhood undernutrition.
WHO Climate Change Risk Assessment, 2014

Figure 7.5 Estimated additional deaths in children aged under 5 years attributable to climate change in 2030 and 2050, in the 12 study regions, under low growth (L), base case (B) and high growth (H) scenarios
(a) Undernutrition (all-cause mortality in children aged under 5 years)
(c) Diarrhoeal disease (mortality in children aged under 15 years)
Climate-related mortality
A key driver of climate change – air pollution – has a substantial annual impact on health:

- 4.3 million deaths due to indoor air pollution
- 3.4 million deaths due to ambient air pollution
No new diseases........

Change in disease profile and presentation
- lengthening of the season of exposure
- earlier commencement of season
- higher levels of exposure
- change in geographical distribution and spread

Setbacks to previous gains in public health

Key concerns:
- vector borne diseases
- mental disorders
- malnutrition
- cardiorespiratory disorders
No new diseases

– Change in disease profile and presentation
  – lengthening of the season of exposure
    – e.g. malaria, pollen
  – earlier commencement of season
  – higher levels of exposure
  – change in geographical distribution and spread

Setbacks to previous gains in public health
The Health Services Response

- Mitigation
- Resilience,
- Vulnerability assessments
- Adaptation strategies
Health Systems Resilience

- A climate resilient health system is one that is capable to anticipate, respond to, cope with, recover from and adapt to climate-related shocks and stress, so as to bring sustained improvements in population health, despite an unstable climate.
  - (WHO, 2016)
CLIMATE RESILIENCE

LEADERSHIP & GOVERNANCE

CLIMATE & HEALTH FINANCING

HEALTH WORKFORCE

VULNERABILITY, CAPACITY & ADAPTATION ASSESSMENT

CLIMATE-INFORMED HEALTH PROGRAMMES

EMERGENCY PREPAREDNESS & MANAGEMENT

MANAGEMENT OF ENVIRONMENTAL DETERMINANTS OF HEALTH

CLIMATE RESILIENT & SUSTAINABLE TECHNOLOGIES AND INFRASTRUCTURE

FINANCING

Service delivery

Health information systems

Essential medical products & technologies

Health & climate research

INHIBIT Monitor & early warning

WHO, 2015
Health Services: Adaptation

In response to climate change, health services need to consider:

• the current burden of ill health;
• the effectiveness of current interventions;
• Projections of where, when, and how the health burden could change with climate change;
• the feasibility of implementing additional programs;
• Other stressors that could increase or decrease resilience; and the social, economic, and political context for intervention (Ebi et al., 2006).
Adaptation

- Improving public health services
- Health adaptation policies and measures
- Early warning systems
- Intersectoral collaboration
Improving public health services

• Enhancing disease surveillance,
• Monitoring environmental exposures,
• Improving disaster risk management, and
• Facilitating coordination between health and other sectors
  • (Woodward et al., 2011)

• Responsive to environmental population migration
• Population vulnerability assessments
Early Warning Systems

- forecasting,
- predicting possible health outcomes,
- triggering effective and timely response plans,
- targeting vulnerable populations, and
- communicating prevention responses
  - (Lancet, 2015)
Health National Adaptation Plans

- Monitoring and surveillance
- Vulnerability and Health Risk Assessments
- Health system readiness
- Research and pilot projects
addressing the public health challenges has substantial co-benefits for climate change adaptation
Co-benefits from Mitigation

Total Greenhouse Gas Emissions 49Gt CO$_2$eq

- **Buildings**: 6.4% - 4.3 m deaths from indoor air pollution
- **Industry**: 14% - 1 m deaths from occupational risks
- **Agriculture**: 21% - 2.8 m deaths from overweight / obese
- **Electricity and heat**: 24% - 3.7 m deaths from outdoor air pollution
- **Transport**: 25% - 1.2 m deaths from road traffic crashes

WHO, 2015
Healthcare and Climate Change

- The global health care sector spends R43 billion on energy every year.
- In Brazil, for instance, hospitals account for 10.6% of the country’s total commercial energy consumption.
- In the US, health-care buildings are the second most energy-intensive commercial sector buildings.
- Construction adds more than 100 million square feet of medical building space every year.
- The UK National Health Service (NHS): carbon footprint > 18 million tonnes of CO\(_2\) each year – 25% of total public sector emissions.
- The US’s health sector’s electricity use adds over US$ 600 million per year in increased health costs.
Reducing the Healthcare Carbon Footprint

- Energy efficiency
- Green building design
- Alternative energy generation
- Transportation
- Food
- Waste
- Water
Key Messages

• Climate change has critical health impacts
• This places an increased burden on health services
• Health system resilience must be included in the strategies for climate change
• Adaptation strategies are necessary and have important co-benefits
• Mitigation will reduce the loss of millions of lives annually
• The health care sector has a responsibility to address its contribution to carbon emissions