Public Health and Health Environment:
A new vision for WHO

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Why Public Health and Environment?
Public Health and Environment

- Review perceptions of "environment"
  - Nature/conservation - human health?
  - Move beyond physical environment . . .
Focus on Public Health

- "chemical safety" = cancer prevention
- "improved transport" = ↓ obesity, injuries, etc
- "safe water" = ↓ DD
- "clean air" = ↓ ARI, CRI

The "prevention arm" within WHO
1. Provide health leadership on international environment policy
   - * Provision of norms, standards, guidelines; evidence and global monitoring

2. Reinvigorate WHO leadership in risk assessment and management
   - * Focus attention on priority chemical, microbiological, and radiological hazards
3. Provide "preventive health" perspective within WHO
   - *New health sector emphasis on "preventive actions" addressing environmental risks to health*

4. Prepare for, and respond to, environmental emergencies and disasters
   - *E.g. REMPAN (radiation alert and response); and chemical arm of WHO alert and response*
5. Identify and respond to emerging threats
   - *E.g. energy and health; radiation and EMF*

6. Focus action through integrated, healthy settings approaches
   - *Mobilize local awareness and support through action in communities, homes, markets, workplaces and schools....*
Mission

to improve health by preventing and reducing environmental hazards
What are the elements of Public Health and Environment?
Environment:

All that which is external to the human host. Can be divided into physical, biological, social, cultural, etc., any or all of which can influence health status of populations (J. Last, Dictionary of Epidemiology)
Environmental risk factors

Local:
- Water quality
- Adequate sanitation
- Indoor air pollution

Transboundary:
- Chemicals
- Outdoor air
- Workplace hazards

Global:
- Climate change
- UV Radiation
- Ecosystem change

Environment & health damage

High mortality
Developing countries

Low mortality
Developing countries

Developed countries

GNP
Global and ecosystem changes impacting on health

- Climate change
  - Stratospheric ozone depletion
    - UV exposure
**Causes of the causes**

- Respiratory diseases
- Injuries
- Malnutrition
- Climate change
- Desertification
- Environmental degradation
- Trade
- Degraded ecosystems
- Migration
- Respiratory infections
- COPD
- Cardiovascular diseases
- Malnutrition
- Intestinal parasites
- Drownings
- Diarrhea
- Malaria
- Dengue
- Leishmaniasis
- etc.

**Proximal causes**

- Health
- Cardiovascular diseases
- Diabetes
- Respiratory diseases
- Injuries
- Diarrhea
- Social factors not related to environment
- Genetic factors
- Physical inactivity
- Vector breeding sites
- Water, sanitation
- Water pollution
- Air pollution
- Radiation
- Radiation cancer
- COPD
- Lung cancer
- Respiratory infections

**Environment-society-individual interaction on health**
What is the evidence for Public Health and Environment?
How much disease is could be prevented by modifying the environment?

Current evidence - best conservative estimate 24%
Diseases with largest environmental contributions

- Diarrhoea
- Lower resp. infections
- Other unintentional inj.
- Malaria
- Road traffic injuries
- COPD
- Perinatal conditions
- Ischaemic heart dis.
- Childhood cluster
- Lead-caused MMR
- Drownings
- HIV/AIDS

% of global disease burden in DALYs

Environmental fraction non-environmental
Diseases with largest environmental contributions

- Malnutrition
- Cerebrovascular dis.
- Asthma
- Tuberculosis
- Suicide
- Depression
- Poisonings
- Falls
- Hearing loss
- Violence
- Lymphatic filariasis
- Lung cancer

% of global disease burden in DALYs

- Environmental fraction
- non-environmental
Figure 6  Environmental disease burden in DALYs per 1000 people, by WHO subregion (2002)
Figure 9: Main diseases contributing to the environmental burden of disease, among children 0–14 years

- Diarrhoeal diseases 29%
- Lower respiratory diseases 16%
- Malaria 10%
- Other 19%
- Intestinal nematode infections 1.5%
- Drownings 2%
- Road traffic injuries 2%
- Malnutrition 4%
- Childhood cluster 5%
- Perinatal conditions 6%
- Neuropsychiatric disorders 6%
Summary

Nearly one quarter of disease burden is due to the environment.
Over one third in children of 0-14 years.
85 of 102 diseases (reported in the WHR) had environmental links.

Per capita results:

15 times more infectious diseases in developing than in developed countries.
2x more injuries per capita in developing countries.
2-3x more cancers and CVD in developed countries.
More than 100x more diarrhoeal and LRI burden if comparing worst and best performing regions.
Implications
Environment and MDG achievement

• **Goal 1: Eradicate extreme poverty and hunger**
  Many environmentally-caused diseases cause lost earnings; malnutrition is 50% attributable to the environment

• **Goal 2: Achieve universal primary education**
  Providing clean water and sanitation encourage school attendance (especially for girls) and freed time for water and fuel collection could be spent for education

• **Goal 3: Promote gender equality and empower women**
  Similarly to goal 2, women generally are the ones collecting water and solid fuels, and looking after children that are sick. Time could be freed for income generation and improving the nutritional standard and health of the family
Environment and MDG achievement

- **Goal 4: Reduce the child mortality**
  The environment is an important contributor to the main diseases affecting children in developing countries, with 180-fold difference between worst and best performing regions

- **Goal 6: Combat HIV/AIDS, malaria and other diseases**
  Over half a million environmentally preventable deaths from malaria, over quarter from occupationally-cased HIV/AIDS; 3 million deaths each year from LRI (AF=42%) and diarrhoea (AF=94%)

- **Goal 7: Ensure environmental sustainability**
  Providing sustainable sources of water and clean energy would not only save many lives but also greatly contribute to a sustainable environment
Misconceptions about health & environment

Environment is a luxury, it is for developed countries

Highest in developing countries

e.g. >30% of Africa's burden attributable to the environment

Environment mainly affects adults, after many years of exposure

Attributable fraction of 37% in the age group 0-4 years

We reduce the environmental disease just by increasing GNP?

A health enhancing environment can be achieved through education, technology and good management

Environmental interventions are expensive

seven fold return investment from water and sanitation;
three fold return for improved household energy
Who influences this process?
Its time for a green Public Health Movement