

绿色安全医院
GREENING the HEALTH SECTOR:
From research to practice

ICOH2012 Cancun
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Greening health sector: March 2012



WHO Climate and Health

WHO Executive Board Report 124.R5, 22 January 2009:

Objective 1. Advocacy and awareness raising. *Action 1.1* Development of tools, guidance, information and training packages to support awareness and advocacy campaigns to protect health from climate change at national and regional levels. **This action will target different population groups, especially health professionals.**

Objective 4. Strengthen health systems to cope with the health threats posed by climate change.. *Action 4.4:* **"In addition, the development of programmes for health systems that will contribute to reducing their own greenhouse gas emissions will be supported."**

... help health-sector professionals to provide leadership in supporting rapid and comprehensive strategies for mitigation and adaptation that will both improve health and reduce vulnerability."

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NEWS RELEASE

Special Rapporteur on hazardous waste,

"The improper management and disposal of medical waste has an adverse impact on the enjoyment of human rights in many countries."

All persons exposed to hazardous medical waste are potentially at risk of injuries and/or contamination through accidental exposure. They include persons in health-care establishments, such as medical staff, patients and workers in support services, and persons within and outside health-care establishments ..."

Refers to the Stockholm Convention on POPs

- Source with "the potential for comparatively high formation" of dioxins & furans: **Medical Waste Incinerators**
 - 40,000 times higher than emission limits set forth.

Sept 2011 A/HRC/18/31

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Why green the health sector?

- Carbon footprint
 - The NHS-England represents 25% of the public sector footprint
 - Hospitals in Europe average 3% and in US 8% of the carbon footprint
- Energy and water use
- Access to sustainable energy and water

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Greening' health facilities can expand coverage of reproductive and child health services in remote and rural areas

- 21-59% of health clinics in six African countries had **NO electricity** at all. Women give birth in the dark, by candlelight, by car headlights.
- 5-12% of clinics surveyed in the same six countries lacked **access to water** from an "improved" (protected well or piped) source.
- Small solar PV units generate basic electricity for **cold chain, diagnostics, telecommunications, water pumps.**

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Why green health care facilities: patient and worker safety

Chemical hazards

- Mercury medical devices: a potent neurotoxin
- Waste anesthetic gases: reproductive hazards
- Formaldehyde: carcinogen
- Health workers with 1.5 – 4 X RR of asthma

"Risking their health while caring for others: Reproductive health hazards of germ-killers"

NIOSH, Harvard School of Public Health and Brigham & Women's Hospital surveyed of 7,000 women nurses and found numerous potential occupational chemical exposures that doubled or tripled miscarriage risk.

WHO Health in the Green Economy –health care facilities, Executive Summary, Lawson C et al. *Am J Obstet Gynecol*, 2010, 2011 Dec 30

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Greening the Health Sector – leading by example



- Builds upon existing body of knowledge and WHO guidance
- Helps health sector prepare for climate change (e.g. drought, heat waves)
- Reduce health sector greenhouse gas emissions leading to more climate change
- *More coherent, environmental health efforts in health sector*



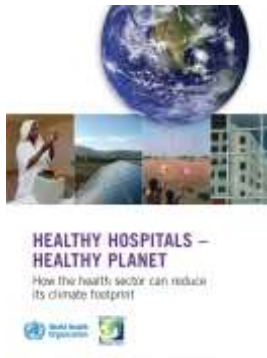
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Greening the Health Sector – Builds upon 3 core areas of activity

- 1. Develop, review scientific and technical knowledge
- 2. Build upon existing partnerships and networks, fine-tune communications
- 3. Support regions/countries in implementation of greening activities beneficial to health & environment



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Elements of a Green hospital

- Green building design – Build hospitals that are responsive to local climate conditions and optimized for reduced energy and resource demands.
 - Asbestos and Lead-free, Siting with transportation – active and public in mind. Transportation – Use alternative fuels for hospital vehicle fleets; Natural ventilation for infection control
- Energy
 - Alternative energy generation – Produce and/or consume clean, renewable energy onsite to ensure reliable and resilient operation
 - Energy efficiency – Reduce hospital energy consumption and costs through efficiency and conservation measures.
- Waste and Water
 - Waste – Reduce, re-use, recycle, compost; employ alternatives to waste incineration
 - Water – Conserve water; rain water harvesting, grey water reuse
- Patient and Worker Safety
 - Biological hazards and nosocomial infx
 - Safer chemicals – disinfectants, sterilants, IPM



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Health Sector is already showing leadership – WHO can support and reinforce



• "Light for Life" – modular solar panels charge LED lights and cell phone chargers for health centres in rural Africa



•Italy: Meyer Children's Hospital Environmental design saves over 1/3 of energy costs



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Leadership in ...addressing energy poverty

Solar "suitcases" piloted in Nigeria to provide lighting to women in child birth reduced maternal/neonatal mortality



• Midwife learning to use solar "suitcase" to light health center in Nigeria (www.wccw.org)



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Leadership in ...Green building design

- South Africa Natural Ventilation for TB Infection Control (design right)
- Hong Kong (at right): Grantham Hospital Nat Vent for TB control since 1957 with SARS benefit
- Singapore: Changi General Hospital saves US \$800 000 per year in energy and water
- Brazil: 101 hospitals in Sao Paulo cut energy use by 25%



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... Leadership in addressing transport to health facilities

- UK Addenbrook hospital with interest-free bicycle loans and bus passes reduced cars on hospital campus by 16% and staff car use by 22%
- Sweden: « eco-driving » reduced fuel use by 10% among ambulances and 50% fewer insurance claims



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....Water, waste management

India Bhopal Sambhavna Trust Clinic

- Harvests rainwater for hospital use
- Solar water heaters and passive ventilation reduce energy uses
- Tropical gardens, irrigated by recycled water, provide fresh fruits and vegetables for staff and patients



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'Greening' offers synergies with existing initiatives

- Mercury phase-out (WHO-HCWH Mercury-free health care initiative)
- Management of chemicals and materials (engaging the health sector in SAICM) for...
 - Elimination/substitution of carcinogens, mutagens and reproductive hazards from use and ensuring safe use and handling where necessary (e.g. anti-neoplastic drugs)
- Earthquake- and climate- resilient structures
- Pharmaceutical waste management
- Good water and sanitation
- Good occupational health practices



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- *By 2017, to phase out the demand for mercury-containing fever thermometers and sphygmomanometers by at least 70% and to shift the production of all mercury-containing fever thermometers and sphygmomanometers to accurate, affordable, and safer non-mercury alternatives.*
 - International mechanism on accuracy
 - Model policy development and catalytic activities to shift demand at global, regional, national, state and municipal levels.
 - Shift production with an emphasis China and/or India.



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... Leading in mercury elimination

New Delhi, India: the city's public health system is substituting mercury in its hospitals. To date 12 hospitals are in the process of substitution.

Sao Paulo, Brazil: more than 100 private hospitals and 34 public hospitals have gone mercury-free

Mexico City, Mexico: The health secretariat announced in September 2009 that its system of 28 hospitals and more than 200 health clinics would join the WHO-HCWH Initiative and phase-out mercury-based medical devices.



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For More Information

WHO Health in the Green Economy
www.who.int/hia/green_economy

Health care waste
www.gefmedwaste.org

Mercury-free health care
www.mercuryfreehealthcare.org

