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## The Role of the Health Sector in Mitigating Climate Change

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## The Role of the Health Sector in Mitigating Climate Change

- Environment benefit and co-benefits by health sector
- Actions at the **global** level
- Actions at the **national** level
- Actions at the **organizational** level
- The way forward



## Environment benefit and environment co-benefits by health sector



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## Health care and CO2 emissions



## Health sector and climate change

From **harm producer** to  
**harm manager** and **harm remover**



## Health sector and climate change

1. Identify and manage health impact of climate change
2. Take the leadership for community actions against climate crisis by
  - Raising the **public awareness** of climate crisis;
  - **Leading by example**: reduce health sector's CO2 emissions by green design and green practices (**environment benefit**);
  - Promoting healthy living (healthy eating, green transportation, breastfeeding) and producing **environment co-benefit** at the same time;
  - Reducing healthcare utilization by the effect of health promotion and disease prevention, and hence reducing CO2 emissions further (**indirect environment co-benefit**)



## Health sector as a powerful actor

- Credible voice on health-related issues
- Contact with people (ex. in Taiwan, 92% of the population utilized health services within 1 year)



## Actions at the global level: Task Force on HPH & Environment



## WHO and HCWH

- Published "Healthy Hospitals, Healthy Planet, Healthy People" in 2008, addressing healthcare facilities' impact on climate changes and their opportunity to help lead the fight against it.
- The future goal is to develop the **Global Network for Climate-friendly Health Care** through the collaboration between WHO, Health Care Without Harm, the Health and Environment Alliance (HEAL), and other NGOs.



## International Network of Health Promoting Hospitals and Health Services

- A model and network initiated by WHO
- More than 800 member hospitals distributed in 5 continents; Taiwan, 2nd biggest with 72 members
- In 2010, "Task Force on HPH & Environment" was approved by the general assembly of the International Network of Health Promoting Hospitals and Health Services, with joint support from WHO and HCWH



International Network of  
Health Promoting  
Hospitals & Health Services



## Task Force on "HPH & Environment"

Task Force Members :

### leadership

- Chair and coordinator: Dr. Shu-Ti Chiou, Vice Chair of GB, International Network of HPH, Director-General, Bureau of Health Promotion, Taiwan
- Prof. Hanne Tønnesen, Director of WHO-CC on HPH in Bispebjerg University Hospital, Denmark, & Secretariat of International Network of HPH
- Professor Jürgen Pelikan, Director of WHO-CC on HPH in Ludwig Boltzmann Institute, Austria

### partnership

- Susan Wilburn, Technical officer, Department of Public Health and Environment, WHO
- Dr. Gary Cohen, Co-Executive Director, Health Care Without Harm
- Dr. Pendo Maro, Senior Climate and Energy advisor, Health Care Without Harm

### participation

- Dr. Michael Wong, Director, Health for Life Center, Khoo Teck Puat Hospital, Alexandra Health Cluster (HPH Member)
- Dr. Chun-Lon Lin, CEO, Tzuchi Medical Mission, Tzuchi Compassionate Foundation, Taiwan (HPH Member)



## Terms of references for the TF

1. Visualizing environment-related health promotion issues in existing HPH Models and Tools
2. Giving examples on best evidence practice related to HPH Models and Tools
3. Developing tools for monitoring the effect of environment friendly intervention programs
4. Disseminating the best practice examples and HPH Models and Tools through the network and increasing the health professionals literacy about climate change and health impacts
5. Establishing a database for environment-friendly hospitals and health services programs



## Website of Task Force on HPH and Environment

Task Force Website Consists of:

- Mission & objective
- Task force meetings
- Conference presentations
- Conference information
- Task force members
- References
- Publications
- Relevant links



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Voice from Taiwan: Yes, We Can!

*Mission, I'm Possible!*



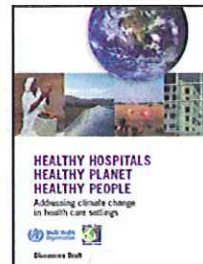
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## The power of change



## 7 Elements of a Climate-friendly Hospital

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



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## Global Green and Healthy Hospitals Agenda

### THE TEN GOALS

1. LEADERSHIP: Prioritize Environmental Health
2. CHEMICALS: Substitute Harmful Chemicals with Safer Alternatives
3. WASTE: Reduce, Treat and Safely Dispose of Healthcare Waste
4. ENERGY: Implement Energy Efficiency and Clean, Renewable Energy Generation
5. WATER: Reduce Hospital Water Consumption and Supply Potable Water
6. TRANSPORTATION: Improve Transportation Strategies for Patients and Staff
7. FOOD: Purchase and Serve Sustainably Grown, Healthy Food
8. PHARMACEUTICALS: Safely Manage and Dispose of Pharmaceuticals
9. BUILDINGS: Support Green and Healthy Hospital Design and Construction
10. PURCHASING: Buy Safer and More Sustainable Products and Materials

HCWH, 2011



## International Conference on Healthy Hospitals & Healthy Environment in Taipei on Oct. 23-25, 2010

- More than 250 participants from 106 hospitals, government departments, and academic institutions



EPA Deputy Minister Chang TC

- Task-oriented training with target of action
- Ministries of Health + Environment + Energy
- & International experts



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## 128 Taiwanese hospitals said “yes, we can!” on Oct. 23, 2010

Health Minister Yang CL

- Calculate reduction of CO<sub>2</sub> emission according to potential reduction in consumption of electricity, water, oil, and gas, and in production of waste.
- 128 hospitals joined and committed to achieve **13% reduction of annual CO<sub>2</sub> emissions** by 2020 compared to the level in 2007
- The amount in CO<sub>2</sub> reduction is equivalent to the annual absorbing capacity of **34 New York Central Parks**



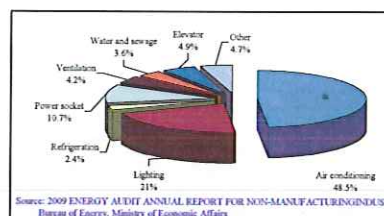
## Source of energy consumption

- Major energy consumption:

**Electricity: 79-83%; Waste: 11-14%; Oil: 3-4%**

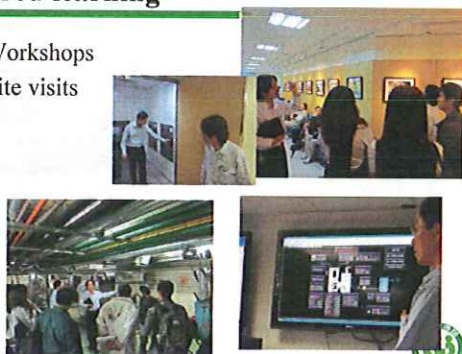
- Major electricity consumption:

**Air conditioning: 48.5%; Lighting: 21%; Power socket: 10.7%**



## Shared learning

- Workshops
- Site visits



## Collection of Best Practice Evidences

- Bureau of Health Promotion published the manual of “**Green Hospital, Green Life, Green Planet: Experience Sharing on Green Hospital**”.
- With examples from 12 Taiwan Hospitals and the Alexandra Health Group in Singapore.
- both in Chinese and in English.
- Available for download on <http://www.bhp.doh.gov.tw/BHPnet/English/ClassShow.aspx?No=201101190001>



## Environment-friendliness in hospital accreditation

- Current: Require the appropriate management of hygiene and waste
- Future: encourage the mitigation and adaptation of climate change



## Front-line actions in health promoting hospitals



## The organizational level: the action of change



## Energy Efficiency

- Energy-saving management: Dx, Centralized plan, and control
- Install energy saving LED lights
- Replace old and inefficient facilities/ purchase machines with high EER
- Energy circulation technique (ex. heat pump)
- Energy saving practice by staff



## Case Examples of Taiwanese Hospitals

	Energy saving rate (%)	Improvements	Energy saved (kWh/year)	Cost saved (USD/Year)
NCKU Hospital	52	Lighting, heat pump	820	290,800
NTUH Yuenlin Branch	61	Lighting, heat pump	44	36,700
DOH Miaoli Hospital	40	Lighting, heat pump	189	84,200
DOH Chang-Hua Hospital	49	Lighting, heat pump	227	111,900
Taipei Veterans General Hospital	51	Air compressor, AC, lighting, heat pump	564	361,230
Puli Veterans Hospital	58	Lighting, heat pump	290	136,800
Avg.	51.8	Total	2,134	26 to 361 thousand USD/year

\* 1 Loe: Kilo liter oil Source: Taiwan Green Productivity Foundation, 2009

## Alternative Energy Generation

- Install roof-top solar panels to reduce sunlight exposure and air conditioning
- Subsidized by the Bureau of Energy, Ministry of Economic Affairs, for solar panel installations.



## Green building design



Green Building Design



## Garden on the roof

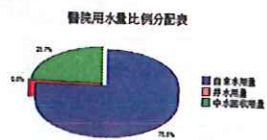
- a total of 6 roof-top gardens, with a combined area of 4579 meter square





## Water

- Recover rain water and ground water for vegetation
- Recovery and treatment of waste water for use in toilet flushing, biological ponds and vegetation irrigation



## Waste

- Replace
- Reduce
- Reuse
- Recycle



Paperless and  
filmless hospitals



## Recycling



Nov 2009 - Doctor's Day -  
at a recycling station in Xindian



## Food

- Use locally produced ingredients for meal service to patients and employees
- Sign purchasing contracts with local farmer's and fisherman's associations, purchase local goods
- Monday:  
the low-carbon day



## Transportation

- BBMW: B(bus), B(bike), M(metro), W(walk)
- Subsidize public transportation
- Encourage walking by placing staff parking further away from the hospital.

Biking to a summit meeting



40 bikes at the dormitory, free of charge





## Encourage use of stairs



## Green purchasing

- Purchase low-carbon, environment-friendly products;
- From: low-carbon, environment-friendly suppliers



## What else?

- By health promotion, lifestyle intervention, prevention and early detection, we can reduce use of medications, surgeries, intensive interventions, while improving well-being and quality of life.



## Promotion of breastfeeding



## Double environment co-benefits

1. Direct:
  - Reduced need of cow milk and reduced cattle breeding
  - Reduced use of cans and bottles
  - Reduced transportation of milk
  - Reduced washing of bottles
2. Indirect:
  - Reduced acute and chronic illness for babies leading to reduced healthcare utilization and reduced carbon footprint
  - Reduced chronic illness for mothers



## Environment literacy



Here and at home!!





## Environment-friendly culture



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## What Are the Next Steps?

- Analyze and publish the experiences; generate evidences of effective implementations.
- Provide international platform for shared learning, benchmarking and collaboration.
- Call for papers with the thesis and case study to draw more hospitals to take action :
  - ❑ 2012 International HPH Conference in Taiwan, April 11-13
  - ❑ Scientific Journal: *Clinical Health Promotion – research and best practice for patient, staff and community*



## The way forward

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**20<sup>th</sup> International Conference on  
Health Promoting Hospitals  
and Health Services**  
April 11-13 2012, Taipei, Taiwan

**Taiwan Welcomes You!**  
**www.hph2012.com**  
**Registration Online Now**  
**Call for Abstracts till Jan. 15<sup>th</sup>, 2011**

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*Let Health be Our Only Product for the Planet!*



*Thank you for your attention!*



