

World Water Day Webinar: Water, Water ... Everywhere? Our Call as Catholic Health Ministry

Feb. 6, 2014
2:00 – 3:00 p.m. ET

© 2014 by the Catholic Health Association of the United States

Reflection for Today's Program

O God, who created the Earth and all that is in it, we thank you for the abundant blessing of water and its availability in our lives.

You created water to be a source of life for your people. However, our community struggles with ensuring access of this gift to all of your people. Help us to be better stewards of your creation by being more aware of our misuse of water.

Help us to advocate for public policies and private actions that make water more accessible to all of our global family.

Amen.



© 2014 by the Catholic Health Association of the United States

2

Today's Presenter



Christiana Z. Peppard, Ph.D., is an expert on fresh water ethics. A scholar, educator and public intellectual, Dr. Peppard is assistant professor of theology, science, and ethics and affiliated faculty in American studies and environmental policy at Fordham University.

Dr. Peppard brings a rigorous and interdisciplinary lens to issues of global water supply, resource extraction, environmental ethics, economic globalization and religion and natural science.

Her book, *Just Water: Theology, Ethics, and the Global Water Crisis*, explores the problem of fresh water scarcity in an era of climate change and economic globalization, and it charts a fresh water ethic from resources in environmental thought, moral anthropology and Catholic social teaching (Orbis Books, 2014). She is the author of numerous peer-reviewed articles and co-edited scholarly volumes on resource extraction, environmental ethics, and science and society.

Dr. Peppard is a frequent lecturer at universities and public forums, nationally and internationally and has been featured on TED-Ed, the History Channel, CNN.com, MSNBC, the *Huffington Post* and more.

Her public media portfolio strives to advance the quality of global public discourse about water, environment, science and ethics,

Today's Presenter



Janet (Brown) Howard is the director of facility engagement for Practice Greenhealth, a membership-based, not for profit organization working with over 1,000 hospitals nationally on environmental improvement strategies. She is also director of content and outreach for the Healthier Hospitals Initiative, an initiative designed to accelerate the widespread use of proven sustainability practices throughout the health care sector for improved health of patients, staff and the community.

She also is contributing editor for "Health Care Design Magazine," a publication in which she tells stories of hospitals and their commitment to healthy and respectful environments for staff, patients and the community.

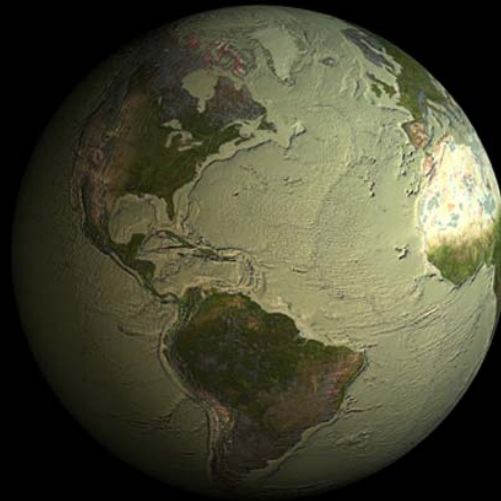
Prior to joining Practice Greenhealth, Ms. Howard worked for Continuum Health Partners in New York City, pioneering sustainability in health care from 1991-2004.

Valuing and Sustaining Fresh Water

Christiana Z. Peppard, Ph.D.
Asst. Professor of Theology, Science & Ethics
Fordham University

<http://photography.nationalgeographic.com/photography/photos/patterns-water/rushing-water-photography.html>

global fresh water : USGS



SCARCITY: Fresh water is ...

- **Not infinite.**
- **Subject to increased global demand**
 - Population growth
 - Economic development / standards of living
- **Renewable?**
- **Unevenly distributed**
 - Naturally
 - Geo-politically
 - Socio-economically
- **Unevenly consumed.**

Uneven Consumption

- Global disparities
- “Consumptive use”
- By sector
 - 70% - Agriculture
 - 22% - Industry
 - 8% - Domestic

“Fossil Water”: the problem of deep aquifers.



“Tapping **fossil water** amounts to extraction of a virtually nonrenewable resource that accumulated over thousands, or even millions, of years.

Fossil aquifers—very deep geologic formations—are practically nonreplenishable.

Tapping fossil water is thus like pumping oil.”

-Brahma Chellamy, *Water, Peace, and War*
(Rowman & Littlefield, 2013)



FORDHAM UNIVERSITY
THE JESUIT UNIVERSITY OF NEW YORK

“Climate change is all about water.”

- Zafar Adeel (UN-Water)

“Water is the hammer with which climate change will hit the earth.”

- Travis Huxman (UC Irvine; former dir., Biosphere II)

Wet places will get wetter and dry ones drier.

People living in poverty will tend to be most affected.



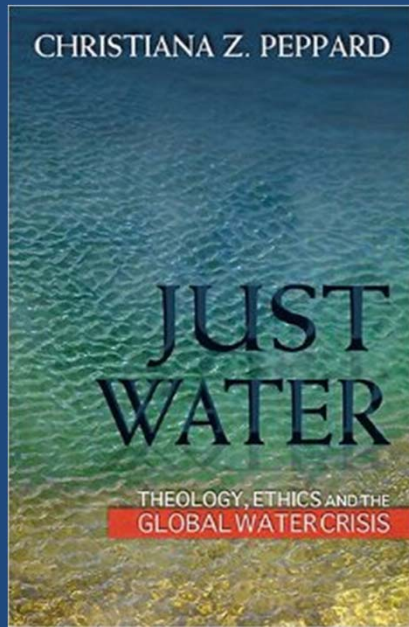
FORDHAM UNIVERSITY
THE JESUIT UNIVERSITY OF NEW YORK

“Fresh water is a right to life issue.”

- Papal addresses, encyclicals, letters (including messages to the triennial World Water Forum)
- Pontifical Council for Justice and Peace, *Compendium of the Social Doctrine of the Church* (2004), ch. 10
- *Just Water: Theology, Ethics, and the Global Water Crisis* (2014), ch. 4.

Institutional and Individual Actions

1. **Lose the lawn.**
2. Keep showering, but **cultivate water virtue.**
-
3. **Location, location, location.**
 - Play to regional strengths, not against them!
4. **Know—and advocate for recharge of—regional water sources.**
5. **Invest in Infrastructure**
 - water re-use (“gray water”)
 - renewable energies with low water footprints
-
6. **Think outside the box ... starting where you are.**



CHRISTIANA Z. PEPPARD

Orbis Books (2014)—just out!

Twitter:

[@profpeppard](https://twitter.com/profpeppard)

Email:

cpeppard@fordham.edu



Sharing Water Conservation Success

Janet (Brown) Howard, Practice Greenhealth



PRACTICE
Greenhealth™



...educate, motivate, and engage healthcare professionals to adopt best environmental practices that increase operational efficiency and support an environmentally sustainable system that improves the health of patients, staff and the community.





Healthier Hospitals INITIATIVE

www.healthierhospitals.org

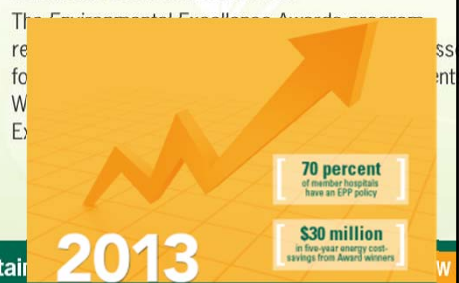



2014
Practice Greenhealth
ENVIRONMENTAL EXCELLENCE
AWARDS

Awards Due February 28, 2014

Get local and national recognition for your sustaina

The 2014 Environmental Excellence Awards season is here.



SUSTAINABILITY BENCHMARK REPORT

A Practice Greenhealth Member Benefit

The Latest News

Sustainability efforts can boost the bottom line



By Laura Wenger, Executive Director | Practice Greenhealth "Sustainability" can mean different...

Upcoming Events

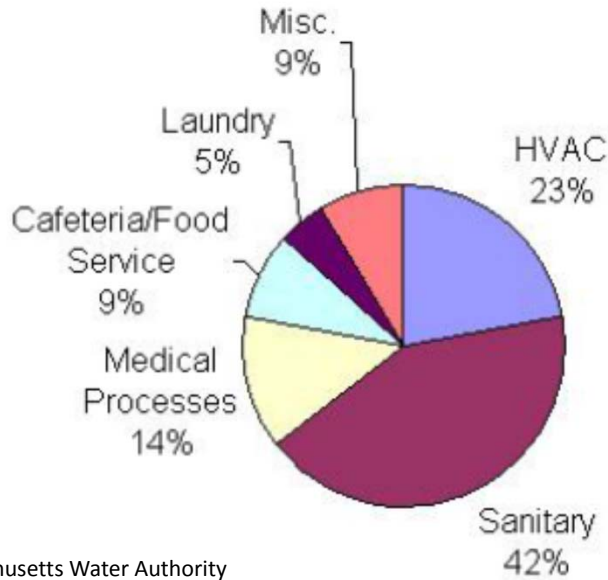
HHI – Smarter Purchasing
Prioritizing Health – Hard Strategies for Using the
for Prioritizing Purchasing

January 28 2014 - 2:00 pm - 3:00 pm Standard Time

www.practicegreenhealth.org



Average Water Use by Category of Facilities Studied



Massachusetts Water Authority

How much water in health care?

Water Foot-print is defined as the total volume of fresh water that is used to run and maintain a hospital.

- An acute care hospital uses an average of **550 gallons** of water per bed staffed bed/day.
- **3.1 million gallons** of water per operating room per year
- **62 gallons** per square foot per year.
- Best Performers used **10 gallons** per square foot per year!
- Average Total Cost per 1,000 gallons - **\$5.59/gallon**
- Average Total Cost per 1,000 gallons with sewer - **\$8.23/gallon**

2013 Practice Greenhealth Sustainability Benchmark Report

Sector Water Benchmarks

| Entity | Gallons of water Per Square Foot per year |
|--|---|
| Practice Greenhealth | 62 |
| IFMA/ASHE Benchmark Report 2.0 | 70 |
| US Energy Information Administration - CBECS | 67.7 |

Water Costs Per Region (\$/100 gal)

- Spokane, WA \$0.36
- Everett, WA \$0.77
- Olympia: \$0.83
- Denver, CO \$0.84
- San Diego, CA \$1.00
- Boston, MA \$1.16
- Centralia, WA \$1.61
- Geneva, Switzerland \$1.95
- Glasgow, UK, \$2.86



Source: The World's Water 2008-2009 by Peter H. Gleick and Geoff Glass, Presentation

Water Reduction & Cost Savings 2013 – based on 92 PGH hospitals

| Normalizing Factor | Gallons of Water | Annual Savings in Water & Sewer Costs |
|--------------------|-----------------------|---------------------------------------|
| Per OR Procedure | 20,600 | \$3.70 |
| Per Operating Room | 15.4 million per year | \$2,280 |
| Staffed Bed | 898,790 per year | \$141 |

Data Source: Practice Greenhealth, 2013

How?

- Assess current water use with a tool like [EPA Energy Star](#) or [Watermark](#).
- Calculate costs associated with water, (water use and sewer fees) which vary by region.
- Make the case for water conservation
- Set goals and integrate into EOC or Green Team committee.
- Develop a water conservation strategy
- Implement, track and report

How to Save Over 12 Million Gallons of Water with One Decision: Upgrade the Hospital's Sterile Processing Department's Equipment

Key Success Factors

Sterile Processing Department

- Utility savings of \$172,154.58 over their original existing equipment yearly, with a decrease of about 12,195,867 gallons of water per year.
- Equipment efficiency, reduced turnaround time for instrumentation back to OR, with no loss of quality or equipment/instruments coming out dry.

Providence St. Peter

Water, Water Everywhere

Top 20 Water Conservation Moves from Providence St. Peter

1. Performed facility water audit
2. Benchmarked
3. Analyze facility for leaks
4. Replaced all single-pass, water-cooled equipment with air-cooled or central chilled water services.
5. Retrofitted four existing vacuum sterilizers.
6. Installed dual-flush Flushometer Retrofit kits
7. Installed pint urinals
8. Installed high-efficiency showerheads
9. Installed flow control faucets
10. Installed sensor-activated public faucets
11. Installed sensor-activated public water closets
12. Planted native landscaping material
13. Used drip irrigation and rain sensing controls
14. Switched to microfiber mops
15. Purchased new kitchen dishwasher
16. Purchased medical air compressors
17. Purchased waste anesthesia gas pumps
18. Specified waterless vacuum pumps or water recycling systems for vacuum pump cooling
19. Installed a boiler stack economizer water recovery system
20. Worked closely with water treatment advisor to minimize make-up water to cooling tower systems

Tap into Conservation

Providence St. Peter Hospital in Olympia, Washington, shares lessons on its efforts to cut water consumption in half.



<http://greenhealthmagazine.org/tap-into-conservation/>

Ascension Health Systems



St. John Health System

St. John Health System, Tulsa, Oklahoma – 5 hospitals

- 24.5% water use reduction
- Transitioned to more efficient cooling tower
- Fixed leaks
- Low Flow Fixtures
- Grounds and Landscaping, irrigation maintenance
- Steam Trap Condensate returns
- Outsourced Laundry



**ST. VINCENT'S
HEALTHCARE**

ABOVE. BEYOND. BECAUSE.

St. Vincent's Healthcare, Jacksonville, Florida – 3 hospitals

- 5.9 million gallon reduction 2012 to 2013
- Low flow toilets and shower head replacement
- Irrigation system maintenance
- Outsourced Laundry
- Increased reporting of leaks and drips
- Volume reduction AND increased costs \$166,000 to \$212,500 even with a 2,000,000 gallon reduction

Irrigation Success in Colorado

- When **weather normalized** MCR, Mountain Crest and PVH combined:
 - Used **5,600,173** less gallons than the same period in 2012
 - Cost savings of **\$27,878 (equivalent to \$278,780 in patient revenue)**
- MCR
 - YTD savings of 2,279,519 gallons (used 19.2% less water than 2012)
 - Cost savings of \$8,579 (compared to last year)
 - YTD watering rate = 356,560 gallons/irrigated acre (8,914,000 / 25.0 acres)
- Mountain Crest
 - YTD savings of 1,855,646 (used 36.2% less water than 2012)
 - Cost savings of \$15,147 (compared to last year)
 - YTD watering rate = 389,535 gallons/irrigated acre (3,603,200 / 9.25 acres)
- PVH
 - YTD savings of 1,465,008 gallons (used 28.2% less water than 2012)
 - YTD cost savings of \$4,152 (compared to last year)
 - YTD watering rate = 555,354 gallons/irrigated acre (3,526,500 / 6.35 acres)

Learn what's
POSSIBLE

 **CleanMed2014**
Creating Healing Environments



CleanMed 2014
GLOBAL CENTER FOR HEALTH INNOVATION
Cleveland, Ohio | June 2-5

HOST SPONSOR



INSPIRATION. EDUCATION. INNOVATION.

CleanMed is Presented by



Surveys & Benchmarks

- Practice Greenhealth's Membership Only Sustainability Benchmark Report and Awards Program – www.practicegreenhealth.org
- Commercial Buildings Energy/Water Consumption Survey - <http://www.eia.gov/consumption/commercial/reports/2007/large-hospital.cfm>
- International Facility Management Association's Operations & Maintenance Benchmarks Report - <http://www.ifma.org/publications/books-reports/operations-and-maintenance-benchmarks-research-report-32>

For More Information

- Greenhealth Magazine Article on Providence St Peter Hospital – Cut water in half! - <http://greenhealthmagazine.org/tap-into-conservation/>
- Practice Greenhealth Water Page - <https://practicegreenhealth.org/topics/energy-water-and-climate/water>
- Stanford Case Study with Sterilizer - https://practicegreenhealth.org/sites/default/files/upload-files/stanford_spd_and_water_savings.pdf
- EPA's Water Sense for Purchasing - <http://www.epa.gov/watersense/>
- Archived PGH Webinar – A Practical Approach to Reducing water by 50% <http://www.prolibraries.com/pgh/?select=session&sessionID=103>

Janet (Brown) Howard

jhoward@practicegreenhealth.org

www.practicegreenhealth.org

413/253-0254



Q&A

Access additional information on CHAUSA.org!

International Outreach resources can be found at
www.chausa.org/international

Environmental Stewardship resources can be found at
www.chausa.org/environment