

HCOs and H₂O:
How health care administrators can manage green sustainable water use in health care organizations

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Presenter Disclosures

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The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

No relationships to disclose

2

Introduction

1. Purpose of the presentation
2. Why is this presentation important?
3. Presentation outline:
 - The water problem
 - Existing solutions
 - Management KSAs

3

What is Sustainability?

- Meeting our needs without compromising the ability of future generations to meet theirs
- Sustainable healthcare involves:
 - Monitoring resource use, depletion, and renewal
 - Helping the natural environment maintain itself for future use

**“When the well is dry,
 We learn the worth of water”**
 - Ben Franklin

4

The Water Problem

- HCOs use too much water, produce much wastewater, and jeopardize water sustainability:
 - Generation of waste 24 / 7 / 365
 - Plagued with overconsumption
 - 100,000 gallons of H₂O/yr per bed
 - 25% of use for sinks, showers, and toilets
 - 75% for non-domestic use

5

The Water Problem

- Water contamination and waste from HCOs has both internal and external effects:
 - **Pharmaceuticals**
 - Discarded or excreted into local sewage systems and contaminate the water supply
 - **Food Services**
 - Industrial agriculture and wasteful irrigation
 - Poor nutrient levels in soil, less oxygen in water
 - **Waste Disposal**
 - Incinerators account for 10% of mercury in H₂O

6

Existing Solutions

- Only 31% of HCOs have developed technological solutions to decrease use and contamination (Commins 2009)
 - **Low Flow Fixtures / Dual Flush Toilets**
 - Saved over 1.5 million gallons a year
 - **More Efficient Autoclaves**
 - Saved up to 5.5 million gallons of H₂O per year
 - **Reclaimed H₂O Systems**
 - Saved 1 million gallons a year through recovery
 - Can be used in 'Closed Loop' cooling systems

7

Existing Solutions

- **Increase Efficiency**
 - 95% efficient boilers vs. 80% industry standard
- **Eliminate Bottled Water**
 - Use pitchers of tap water at meetings
- **Waterless Hand Washing**
 - Sufficient for many situations, prevents waste
- **Reduce Linen Use**
 - Change towels and sheets only when necessary

8

Existing Solutions

- HCOs can also protect their communities:
 - **Organic Food Products**
 - An HCO has 35 farmers markets on campuses
 - **Filter Run-off / Store Reclaimed Water**
 - Irrigation - Saved 1.5 million gallons of water
 - **Xeriscaping**
 - Native plants don't require extra irrigation
 - Saved about 4.5 million gallons of water/year

9

KSAs for Health Care Administrators

- **Leadership**
 - Motivate and Support champions
 - “Green Teams” for employee engagement
 - Why is saving water so important?
- **Measurement**
 - Conduct a water use audit
 - Create a balanced scorecard
 - Monitor water use and changes

10

KSAs for Health Care Administrators

- **Systems Approach**
 - Many inter-relationships to 'going green'
 - Build partnerships with green suppliers
 - Intra-relationships within the HCO
- **Operations Management**
 - Lean / six sigma: Green work redesign
 - Root cause (Fishbone / Value Stream)
 - Re-evaluate standard operating procedure

11

KSAs for Health Care Administrators

- **Mission, Values, Goals**
 - A part of the organization
 - “Statement of Principles of the Environment”
 - “Reverence for Earth” Mission Statement
- **Culture**
 - CSO – ‘Chief Sustainability Officer’
 - Reward and Recognition for H₂O
 - Generational Gaps (Boomers vs. Gen X)

12

KSAs for Health Care Administrators

- **Financial Management**
 - Cost accounting
 - Capital budgeting / Life cycle analysis
 - Green investments
- **Human Resources**
 - ‘Green’ job roles and responsibilities
 - Evaluate employees on ‘H₂O’ initiatives
 - Orientation and training


13

Lessons Learned

- 1) HCOs use much water, produce much waste water, and jeopardize water sustainability
- 2) Technological solutions greatly reduce water use and waste
- 3) Managers can use KSAs to implement change for better water sustainability

14

Questions



“In our every deliberation, we must consider the impact of our decisions on the next seven generations”

- ‘The Great Law’ (The Iroquois Confederacy)

15

References

1. Alderson, K. 2008. Green plumbing opportunities for healthcare facilities. *PM Engineer* 14(10): 48-54
2. Ayers, D. Personal Communication.
3. Commins J. 2009. ‘Hospital’s Eco Agenda Saves Money.’ *Health Leaders Media*, 4/22/09
4. Keckley, P.H. and Fam, M. *Greening Sustainability in Health Care and Life Sciences*. Washington, DC: DeLotte Center for Health Solutions, 2008.
5. Popely, D. 2009. ‘Beyond the bin: How healthcare is responding to the sustainability movement.’ *Healthcare Executive*, May/June, 9-19.
6. Serb, C. 2008. ‘Think Green’. *Hospitals and Health Networks*. 8/22/08
7. Troy, M. and Berryman, R. 2005. ‘Perioperative nurses get water wise.’ *Australian Nursing Journal*, August, p.43.
8. World Commission on Environment and Development

16