

Towards a Sustainability-Enhanced Approach to Patient Centered Health Care Delivery



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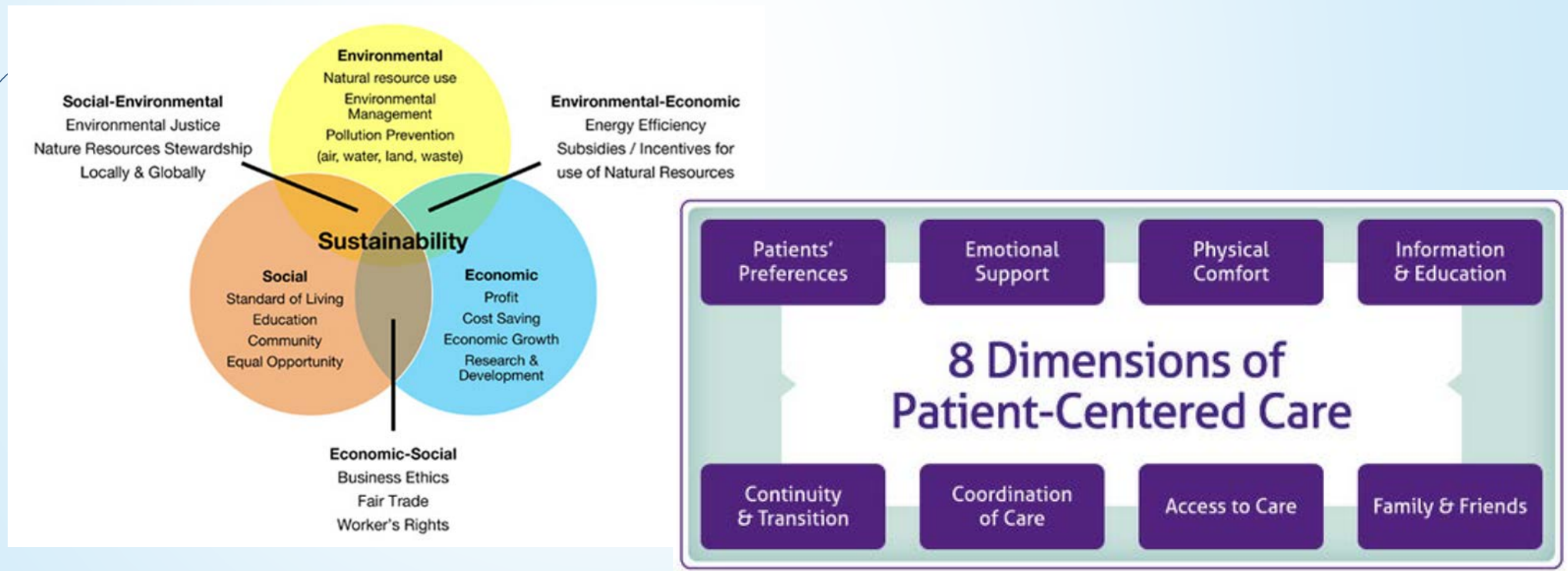
AIMS

- (1) to provide an overview of sustainability enhanced approached to patient-centered health care delivery;
- (2) to examine the role of health communication in the sustainability context;
- (3) to provide R&D resources for assisting with the implementation of sustainability-enhanced patient centered care in health care organizations.

“Today hospital organizations face a paradoxical challenge between treating illness and disease in order to restore and promote health, while avoiding the utilization of resources that degrade the environment, and result in bi-products that contribute to additional disease and illness.”

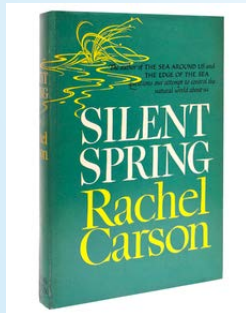
Dominance of Two Paradigms

- ▶ “Sustainability is increasingly seen as “a logical extension of a hospital’s mission to care for people and is consistent with the patient-centered philosophy,” (Guenther & Atwood, 2006, pg 46).



Why Sustainability?

- It is clear environmental change disproportionately affects poor and marginalized populations (Shonkoff, Morello-Frosch, Pastor & Sadd, 2009; 2011).
- Lack of access to safe drinking water, sanitation and hygiene in many parts of the world impacts resource demands and subsequently affects the health outcomes of millions globally (UN-Water, 2014, WHO, 2011).
- Chemical contaminants have been related to elevated disease risk including “diarrheal, vector-borne, and neglected tropical disease; malnutrition; and non-communicable disease,” (Dora, et al, 2015, pg. 385).
- Wicked Problems



Timeline in Healthcare

- In 1987, medical waste appeared on the shores of the east coast prompting negative media exposure and generating public fear.
- In 1988, the EPA created the Medical Waste Tracking Act, which required eastern states to red bag medical waste based on perceived public risk.
- In 1992 Physicians for Social Responsibility (PSR) adopted an organizational focus on prevention by expanding its mission to applying medical expertise to environmental health issues, and formally recognized global climate change and toxic pollution as significant risks to human health and development.
- In 1996 American Public Health Association (APHA) passed a resolution on the prevention of dioxin generation from PVC plastics in healthcare. The same year Health Care Without Harm (HCWH) was founded with a dedication to protecting public health from the effects of climate change and environmental toxicities. Increasing collaboration and cooperation
- In 1998 the Sustainable Hospital Program at the University of Massachusetts Lowell began providing scientific-technical guidance for the healthcare industry, as a useful tool for selecting products and practices that promote occupational and environmental health and safety.
- In 1998 the AHA and the EPA signed a Memorandum of Understanding requesting health care providers voluntarily eliminate mercury and other harmful chemicals, while also reducing waste volume.
- In 2002, the Green Guide for Health Care (GGHC) became available. The same year three of the U.S. largest hospital group purchasing organizations implemented mercury prevention policies
- In 2008; the Associated Press (AP) began looking into the pharmaceuticals in our drinking water.
- In 2009, the PSR in conjunction with the American Nurses Association (ANA) published the "Hazardous Chemicals in Health Care Report,"
- In 2011, HCWH released the Global Green and Healthy Hospitals Agenda, a framework for greening healthcare around the world.



Preface: 2004 Red Cross Study

- Identified more than 280 chemicals in 10 newborns' umbilical cord blood.
- Chemicals are commonly found in pesticides, consumer product ingredients, and wastes from burning coal, gasoline, and garbage (EWG, 2005).
- Of those chemicals identified 180 are known carcinogens and 217 are toxic to the brain and nervous system (Berning, 2012; EWG, 2005).
- Many of the chemicals identified are found in paints, coverings and other materials commonly used in building construction today.



Current Issues



- ▶ **Resource Procurement & Allocation:** “Unsustainable patterns of resource use and consumption are causing profound damage to the ecosystems upon which human existence depends” (Dora et al., 2015, pg. 385).
- ▶ **U.S. Aging Population:** Health costs and demands are expected to rise sharply as the +65 population is anticipated to double by within the next decade; growing from 40 million to 80 million
- ▶ **Anti-microbial resistance:** EIDs, rEIDs –Regulation: 80% of all antibiotics sold in the U.S. are given to cattle and other food animals
- ▶ **Immigration & Naturalization Policies:** verification and falsification of vaccination records; active TB multi-drug resistance strains in circulation

On-going Issues

- Holistic broad-based approach to sustainability has not been widely integrated into the health care industry as a central focus relevant to health promotion, patient care, and health stewardship as it has in other markets (i.e., higher education).
- After 30 years- only ½ of U.S. healthcare organizations have reportedly engaged.
- Range in degree of participation Tier I, II, III



Human-Environmental Health Connection



- In 1980's there were up to 80 million white-rumped vultures (*Gyps bengalensis*) in India
- In the 1990's Great vulture die-off: India, Pakistan, and Nepal began
- By 2010 it was estimated that the populations of vultures had fallen by 97% and almost 100% percent, respectively: from millions, 45,000 to 1,000
- **Diclofenac** – a nonsteroidal anti-inflammatory drug (NSAID) taken or applied to reduce inflammation and reducing pain in certain conditions- Livestock applications.
- It since has been banned for veterinary use in many countries.
- **Health Outcomes:** Increase in feral dogs, Zoroastrian funerary practices, agribusiness pharmaceutical use



Patient-Centered Opportunities



- ▶ Facility design and operations
- ▶ Engagement and community outreach programs
- ▶ Marketing and promotion of health services
- ▶ Advocacy for health care policies that contribute to sustainable health care systems.

OP1: Facility Design & Operations

- Energy
- Waste
- Water
- Food
- Technology



Hospitals



Medical Clinics



Nursing Homes



Pharmacies & Medical Supplies



Environmental Sustainability



Person-Centered Care



Bereavement Services



Child Protection Training

Example: Gunderson Health

- Gunderson Health System became the first energy independent medical campus in the United States
- New narratives of progress
- Transparency
- Impact



Since 2008, our conservation efforts alone have resulted in a 53% improvement with a cumulative financial savings of more than \$11.2 million

[Learn about Energy Conservation](#)



We had an impressive 46% recycling rate in 2015

[Learn about Recycling](#)



We've eliminated 88% of our food waste saving 25 tons from the landfill annually

[Learn about Waste Management](#)



We heat and power with renewable biomass from our region

[Learn about Biomass Energy](#)



We are generating wind power and using solar energy

[Learn about Wind and Solar Energy](#)



We use geothermal energy – the earth – to heat and cool

[Learn about Geothermal Energy](#)



We use cow manure and landfill waste to create energy

[Learn about Biogas Energy](#)

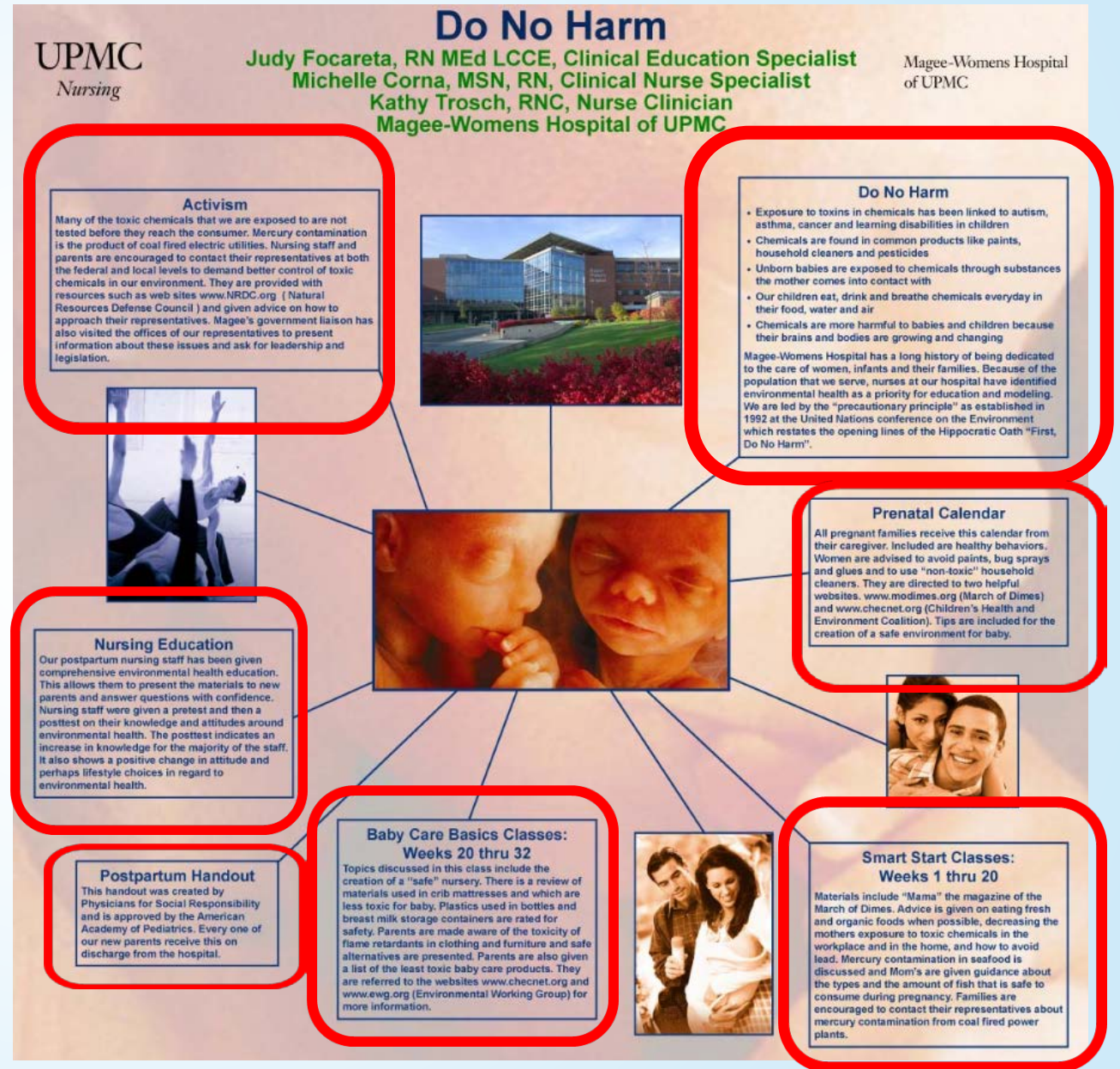


OP2: Community Engagement

- Urban heat islands, floodplains, food deserts, and coastal communities may have both greater exposure and less capacity for adaptation (Uber et al, 2014; Balbus & Malina, 2009; Jiang et al, 2010; NRC, 2010)
- Provides an opportunity for important risk communication as a component of patient-centered care to contribute to patient literacy, health understandings, foci of preparedness messages, and targeting of public health communication campaigns.
- Local-level: Leadership & Stewardship on Health Issues

Example: Magee-Women's Hospital

- Luminary Project
- Risk Information in applied context;
- Effects not derived from one message-type or format;
- Multi-faceted stakeholder engagement.



OP2: Marketing & Promotion



Waste Management

When Vernon started in 2007, Cleveland Clinic's landfill diversion rate was four percent. As a result of aggressive recycling, food waste composting, and medical supply donation programs, the diversion rate climbed to an impressive 30 percent in 2011 and is holding steady into 2012.

Energy

Energy consumption is a core sustainability issue, asserts Vernon: "All aspects of our program touch on energy. The bottom line is that every dollar we save on energy can be reinvested into patient care." Over the past three years, Cleveland Clinic has reduced its energy usage per square foot by 20 percent (a \$20 million cost reduction), gaining it an Energy Star Partner of the Year honor in 2011.

Healthy Buildings

In 2007, Cleveland Clinic adopted the LEED Green Building Rating System for all new major construction projects. Seven buildings have been certified and ten more will seek certification upon completion. These buildings do and will excel in construction debris recycling; waste, water, and toxicity reduction; natural light utilization; and indoor air quality.

Food

"When it comes to nutrition, we're out in front, walking the talk," says Vernon. Food services follows a robust guide that dictates portion control, whole grain inclusion, and the exclusion of trans fats. Also, an aggressive local procurement program instituted in 2008 assures locally sourced foods are utilized in all cafeterias.

The Community Farmers Market is just entering its fifth season and is a joint project between the Office for a Healthy Environment, the Wellness Institute, and Community Outreach. These seasonal markets encourage community members to buy fresh, locally grown food from over 35 participating producers and farmers.

Community

Sustainable Cleveland 2019 (SC2019) is a commitment by Northeast Ohio to work towards a sustainable future and a healthy community. Vernon serves on the mayoral committee and notes that Cleveland Clinic's involvement is key: "We are the largest employer in northeast Ohio," she says. "There is no way we can achieve our goals without engaging the community." Cleveland is already helping to promote the 2012 theme of Local Foods.

Working for Cleveland Clinic's 43,000 employees and its patients as well as area communities, Vernon and her Office for a Healthy Environment continue to succeed through continual engagement. "Getting the word out is really important to our programs," said Vernon. "When we inspire others, they in turn take ownership and shape their own paths and we get to help celebrate their achievements."

Messages, Channels & Forms of Delivery

- Move from Multi-channel to Omni-channel Research
- An omni-channel approach, is complimentary to patient-centered care, as from a marketing perspective it puts the patient, not local or paid corporate media, at the center of its strategy.
- This type of approach acknowledges, "mobile and social have enabled customers to not only quickly switch between channels, but actually use channels simultaneously," (Pophal, 2015).
- "Instructional messages to be designed in a way that they modify the cognitive, affective, or psychomotor behavior of a person through the manipulation and planning of different symbols and signs" (Lohr, 2008).
- For example, a patient reading pharmaceutical information on their mobile phone while evaluating an over the counter (OTC) product at a pharmacy, or other retail location.
- Sustainability-enhanced patient dialogue of warning messages for possible interactive effects of OTC medicines based on current prescriptions and environmental impacts (Case of EE2)
- This approach can be extended into recognizing locally sourced foods, air quality, heat conditions and water quality.



OP4: Practitioners as Change-Agents

- Vaccination Programs
- Pharmaceutical regulation; NCDs
- Advocacy: [The Flint Water Crisis](#)



Potential Outcomes & Benefits

- Organizational Reputation
- Employee Morale
- Improved health literacy
- Reduction in Biotoxicity
- Restoration of Relational P&P Disruptions

HEALTH EFFECTS OF CHEMICALS USED IN FRACKING

INFOGRAPHIC BY PHYSICIANS FOR SOCIAL RESPONSIBILITY- LOS ANGELES | WWW.PSR-LA.ORG
BASED ON "NATURAL GAS OPERATIONS FROM A PUBLIC HEALTH PERSPECTIVE" | WWW.ENDOCRINECORRUPTION.ORG
COLBORN, THEO, ET AL. "NATURAL GAS OPERATIONS FROM A PUBLIC HEALTH PERSPECTIVE." HUMAN AND ECOLOGICAL RISK
ASSESSMENT: AN INTERNATIONAL JOURNAL 17.5 (2011): 1039-1056.



BY THE NUMBERS

980

NUMBER OF FRACKING CHEMICAL
"PRODUCTS" WE KNOW ABOUT

649

NUMBER OF CHEMICALS IN THE 980
FRACKING "PRODUCTS"



R& D Resources



Professional Development





Conclusion(s)

- Integrative, Prospective, Visionary Focus with Measurable Impacts
- Holistic approach to Patient-Centered Care
- Proactive vs. Reactive
- Leadership & Stewardship for Providers of Care and Info/Knowledge
- Focus on the functional rather than peripheral aspects of Communication
- Focus on local impact for global good
- Sustainability-enhanced patient-centered care:
 - Avoids: creating new patients reliant on care from unsustainable resources
 - Delivers: culturally-sensitive, environmentally-sound, economically-feasible, and socially beneficial manner

Thank you!

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