Green Teams: Catalysts for Sustainability

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Professor
University of San Francisco
Charlotte Brody, RN
Body Burden Studies

Chemicals found in Charlotte:

214 tested

87 found
Charlotte Brody, RN
Body Burden

Chemicals found in Charlotte

number: associated with:

• 54  Birth defects and dev delays
• 53  Immune toxicants
• 52  Cancer
• 37  Brain and nervous system
• 23  Reproduction and fertility
• 16  Hormone activity
• 10  Gastrointestinal (including liver)
Auto Products
Brake Fluid, De-icer, Lubricant, Sealant, and more...

Pesticides
Animal Repellant, Fungicide, Herbicide, Insecticide, and more...

Personal Care / Use
Antiperspirant, Hair Spray, Makeup, Shampoo, Soap, and more...

Arts & Crafts
Adhesive, Glaze, Glue Primer, Varnish, and more...

Home Office
Ink, Toner, Correction Fluid, Electronics Cleaners, Pens, and more...

Inside the Home
Air Freshener, Bleach, Cleaners, Toilet Bowl Cleaner, and more...

Landscape / Yard
Fertilizer, Lawn Care, Swimming Pool Products, and more...

Home Maintenance
Caulk, Grout, Insulation, Paint, Putty, Stain, and more...

Pet Care
Flea & Tick Control, Litter, Stain/Odor Remover, and more...
Hazardous Chemicals in Health Care: A Snapshot of Chemicals in Doctors and Nurses

- 12 Doctors
- 8 Nurses
- 62 Chemicals (including congeners)
  - BPA
  - Perfluorinated compounds
  - Phthalates
  - PBDEs
  - Triclosan
• **BPA** – EDC, repro toxicant, breast and prostate Ca, brain function, obesity, thyroid dysfunction

• **Perflourinated compounds** – EDC, Immunotoxicant, liver/pancreatic tumors (animal)

• **Phthalates** – reproductive development

• **PBDE** – neurotoxicant (brain function, memory, behavioral problems)

• **Triclosan** – thyroid dysfunction, EDC

**At least 24 chemicals were found in any given person studied.**
Asthmagens and Asthma Triggers in health care

- Chemical Cleaners,
- Disinfectants/sterilizers
- Natural rubber latex
- Pesticides
- Volatile Organic Compounds (VOCs)
- Baking flour
- Acrylates: methyl methacrylate and cyanocrylate
- Perfumes/fragrances
- Phthalates (plasticizers)
- Environmental Tobacco Smoke (ETS)
- Biologic allergens
- Pharmaceuticals
Common Nursing Exposures at Work

– Drug residues
– Sterilizing / Disinfecting chemicals
– Housekeeping cleaners
– Pesticides (biocides, included)
– Anesthetic waste gases
– Radiation
Nurses Exposure Survey

• Total respondents were 1,552 from all 50 states:

• Exposures to 11 chemicals or hazardous agents
Survey Findings ~ Medications

• 95% reported exposures

• 14% higher rates of cancer
Survey Findings ~ Medications
Chemotherapeutic Agents

• 41% reported exposures

• 42 percent higher rates of cancer in those who reported the highest exposures compared to those with no exposures.
Survey Findings ~ Personal Care Products

- 97% reported on-the-job exposures

- 1/3 of all products contain one or more ingredients linked to cancer

- 40% contain “fragrances” (mixtures often associated with allergic reactions and some associated with cancer risks)
Survey Finding ~ Sterilization & Disinfectant Agents
Glutaraldehyde

- 52% reported on-the-job exposures.
- 46 percent higher rates of asthma
Breast Cancer
NUMBER OF PROJECTED OPEN RN POSITIONS
UNITED STATES 2005-2020

By 2020, the projected RN shortage will be 434,000.
Denise Choiniere’s Story

Green Purchasing

Quality + Cost + Delivery + Environment

Working for a Greener Future
Recycling Blue Wrap
Blue Wrap Fashion Show
Autoclavable instrument cases
Getting Toxins Out of the Health Care Setting

- Environmentally-preferable products
- Green Cleaning products
- Non-incineration
Green Universities

• **Product selection:**

• Consider life-cycle analysis when choosing products:
  – Worker exposures
  – Pollution generated during mftr – air, water
  – Natural resource extraction (non-renewable resources and water)
  – Energy use
  – Transportation
  – Toxicity (exposures during use / disposal)
  – Disposal / recyclable / reusable
DEHP in IV bags and tubing
(di-ethylhexyl phthalates)
DEHP Leaches into IV fluids
Environmentally Preferable Purchasing (EPP)

Choose DEHP-free products

and..... save money!!
NEONATAL CARE WITHOUT HARM

Katherine M. Jorgensen, RNC, MSN/MBA, Hon.D.
Healthy Hospitals
Controlling Pests Without Harmful Pesticides

Written by Kagan Owens, Beyond Pesticides

A REPORT BY

Beyond Pesticides
Health Care Without Harm
Perfumes and Fragrances
# Hospital Environmental Health Assessment Tool

<table>
<thead>
<tr>
<th>Hazardous Materials</th>
<th>Assessment</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
<th>Standard of Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your hospital have:</td>
<td></td>
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<tr>
<td>A written Hazard Communication Policy regarding potentially harmful chemicals?</td>
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<tr>
<td>Have you been trained regarding the specific potential health effects associated with the cleaning products, disinfectants, pharmaceuticals, and other products that you are commonly exposed to at work?</td>
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<tr>
<td>Mercury fever thermometers?</td>
<td>O</td>
<td>O</td>
<td>O</td>
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<tr>
<td>Mercury sphygmomanometers?</td>
<td>O</td>
<td>O</td>
<td>O</td>
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<tr>
<td>Mercury thermostats?</td>
<td>O</td>
<td>O</td>
<td>O</td>
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<tr>
<td>GI devices (i.e., Miller-Abbott tubes)?</td>
<td>O</td>
<td>O</td>
<td>O</td>
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<tr>
<td>Latex gloves?</td>
<td>O</td>
<td>O</td>
<td>O</td>
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<tr>
<td>DEHP-containing IV bags/tubing?</td>
<td>O</td>
<td>O</td>
<td>O</td>
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<tr>
<td>Are pesticides used on hospital grounds?</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td></td>
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<tr>
<td>If so, what?</td>
<td></td>
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<tr>
<td>Are pesticides used in the hospital?</td>
<td>O</td>
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<td>If so, what?</td>
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</tbody>
</table>

| Waste Management | | | |
| Do you recycle: | | | |
| Paper / cardboard? | O | O | O | | |
| Plastic / glass? | O | O | O | | |
| Electronic waste? | O | O | O | | |
| Batteries? | O | O | O | | |
| Blue Wrap? | O | O | O | | |
| Florescent light bulbs? | O | O | O | | |
| Kitchen waste to compost? | O | O | O | | |
| Do you require double-sided copies? | O | O | O | | |

| Cleaning | | | |
| Does your hospital use: | | | |
| Environmentally safe cleaning products and methods? | O | O | O | | |
| “Energy Star” appliances and equipment? | O | O | O | | |
Where to start…

- Environmentally preferable purchasing
- Energy efficiency
- Glutaraldehyde/EtO
- Green Cleaning and microfiber mops
- Green building approaches
- Integrated pest management
- Pharm waste
- PVC/DEHP/Hg elimination
- Reduce / Reuse / Recycling
- Single-use device reprocessing
- Solvent recovery
- Sustainable Foods
- Water conservation
Vendors are Key
Menu of Options: Steps to Healthier Food in Hospitals

- Antibiotic-free meat/poultry
- rBGH-free milk
- Organic and other certified foods
- Certified coffees
- Locally-sourcing food
- Fast-food free zone
- Farmers’ markets
- Hospital gardens
- Compost and reduction of food waste
- Hospital food policy
- Vending machine use
Eliminating “Fast Foods” in Health Care Settings
ANTIBIOTICS
THE END OF MIRACLE DRUGS?

WARNING
NO LONGER EFFECTIVE AGAINST KILLER BUGS
Green Universities

- **Transportation**
  - Use alternative fuels for university fleets
  - Encourage and **design** for walking and cycling
  - Incentivize staff use of public transportation

- **Food**
  - Provide local, seasonal, sustainably grown/raised foods

- **Waste**
  - Reduce, reuse, recycle
  - Compost

- **Eliminate on-site incinerators**
Green Universities

• Water
  – Conserve
  – Cisterns (Stanford’s new building)

• Integrated Pest Management
  – Most pesticides/herbicides are petrochemically-based → reduce
Green Universities

POLICY:
NO bottled water on campus

• US bottled water uses 17 million barrels of oil, not including the energy for transportation
• Bottling water produced more than 2.5 million tons of carbon dioxide
• It takes 3 liters of water to produce 1 liter of bottled water
Green Universities

More on **Bottled Water**. 

- Most bottles are polyethylene terephthalate (PET) (900,000 tons of the plastic annually)

- PET is produced from fossil fuels – typically natural gas and petroleum.
Provide incoming employee with a water bottle
And bottle refilling stations
Resources Galore

- Health Care Without Harm

- Practice GreenHealth
Alliance of Nurses for Healthy Environments (ANHE)

Bringing Science and Passion to the Environmental Health Movement
Welcome to www.enviRN.org !!

- A Virtual Community of Nurses
  - Co-creating
  - Sharing, networking, and communicating
  - Educating – curriculum / e-Text
  - Convening nursing researchers
  - Providing resources
  - Presenting practice recommendations
  - Advocating for positive change

A “power-tool” for the nursing community and healthy environments

For more info, contact Katie Huffling    khuff001@umaryland.edu
WHY Health Care?

We get it.
WHY Health Care?

• We recognize the wisdom of heeding early warnings
WHY Health Care?

• We are “fix it” people
Why health care?

• We care passionately about our patients and our communities.
We have the potential to “lead” our communities by example.
...and we know that human health and the environment are inextricably related
THANK YOU !!