

# **Role of Third Hand Smoke in Tobacco Control**

**OTRU Third Hand Smoke Workshop  
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Thomas E. Novotny, MD, MPH  
Mel Hovell, PhD, MPH



SAN DIEGO STATE  
UNIVERSITY

# Key Considerations

- Third hand smoke (THS) as environmental 'externality' of tobacco use
- Lessons learned from
  - Passive Smoking
  - Environmental concerns about tobacco production
  - Butt waste issues
- Political economy of THS
  - Behavior change
  - Regulatory regimes
  - Environmental justice



# Externalities of Tobacco Use

‘When activities are harmful to one of the economic agents, and the harmed agent is not compensated for the harm, the cause of the harm is typically referred to as a negative externality.’

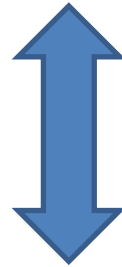
- Annoyance
- Environmental pollution and degradation
- Toxic exposures and disease
- Economic costs
  - Cleaning
  - Medical care
  - Property values/rentability
  - Prevention and control (policy administration costs)



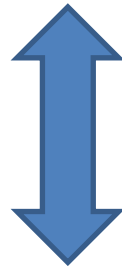
# Core Environmental Principles

**Precautionary Principle**

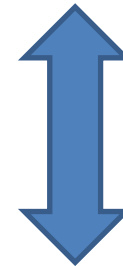
**Polluter Pays**



**Extended Producer Responsibility**



**Product Stewardship**



**Design for the  
Environment**

# Lessons Learned No. 1: Passive Smoking (SHS)

- Causes premature death and disease in children and in adults who do not smoke, therefore is an 'externality' of individual behavior
- Exposed children at an *increased risk* for SIDS, ARI, ear problems, asthma, slowed lung growth
- Immediate adverse effects on adult CV system and *causes* CHD and lung cancer
- May *increase risk* for breast cancer among postmenopausal women



## **Lessons Learned No. 1 (cont.):**

- No risk-free level of exposure to SHS
- Persistent national exposure: NHANES cotinine levels despite substantial progress in TC
- Eliminating smoking in indoor spaces protects nonsmokers from SHS
- Separating smokers from nonsmokers, air cleaning/ventilating cannot eliminate exposure
- Population health benefits may be associated with restrictive community smoking policies
- Don't use the term "ENVIRONMENTAL TOBACCO SMOKE"

# Lessons Learned No. 2: Tobacco Production Concerns

## Agriculture

- 200,000 hectares/year of forests/woodlands globally removed by tobacco farming
- Deforestation mainly in developing world, (1.7% of global net losses of forest cover)
- Agrochemical pollution
- Soil degradation
- Food insecurity

## Manufacturing

- Tobacco manufacturing produces chemical wastes, including nicotine
- This waste is reported through the Toxics Release Inventory (TRI)
- Tobacco industry ranked 18<sup>th</sup> in total TRI chemical waste production
- Cost globally for mitigation \$400 million

# Lessons Learned No. 3: Fires and Cigarettes

- >90,000 US fires/year caused by cigarettes
- Cigarettes are leading cause of US fire deaths
- Canada (2005) and all US states (2012) mandate self-extinguishing cigarettes



Black bar indicates  
“Fire Safe”



# Lessons Learned No. 4: Butts Waste and the Environment

- Tobacco waste is ~ 38% of all debris items collected from beaches, rivers, and streams on annual cleanup days
- 5.5 trillion cigarettes are consumed globally each year;
- Of these, 4.95 trillion are filtered
- Of these, >60% are littered
- Number one item collected on International Beach Cleanups annually since 1996



# Effects of Cigarette Butt Waste

- Environmental toxicity
  - Leachates
  - Sediment contamination
  - Consumed by fish, sea birds, turtles, & pets
  - Toxic to Daphnia and other organisms
  - Lethal dose (50) for fish = 1 butt/liter of water
  - Toxic to children who may consume
- Environmental degradation
- Economic cleanup costs to communities

# **The Costs of Tobacco Product Litter: Calculating Costs and Abatement Fees in San Francisco**



**John E. Schneider, PhD  
Oxford Outcomes, Inc.**

# Political Economy of Tobacco and Environmental Issues

- Regulatory environment
- Information asymmetry
- Exposure disparities and environmental justice
- Tobacco industry Liability

**Over to Dr. Hovell**

**Changing Social Norms  
through THS Research and  
Policy**

# Culture Change & Policies

- Increased media-> population literacy
- Increased regulation
- Increased costs to industry/sellers/smokers
- Decreased environmental damage
- Decreased THS exposure to nonsmokers
- Increased Anti-tobacco culture
- Increased regulations

# Engineering a Tobacco-free Society

- Exposure to clean air is refreshing
- Healthy children are a joy
- Healthy forests, animals and fish are wonders to behold
- Multiple benefits to multiple special interests
- Changing social norms: increased literacy
- Reduced smoking prevalence is the goal
  - Increasing cessation
  - Decreasing initiation

# Interventions that might work...

- Research: get the science right on toxicity and mitigation
- Labeling: THS as environmental hazard
  - Disclosure in real estate transactions
- Enforcement: new and existing laws re: housing
- Shifting responsibility
  - To tobacco industry
    - Litigation
    - Cleanup costs
  - To landlords/sellers
    - Exposure mitigation
    - Smoke-free policies
- Behavior changes/enforcement policy





# Conclusions

- Mitigating THS is another avenue through which the global non-smoking norm may be pursued
- Behavior change can be supported through related policy and legislation
- Exposure reduction is critical to assure environmental justice for exposed, non-smoking, vulnerable populations

# The Behavioral Ecology of SHSe: A pathway to complete tobacco control

M. Hovell & S. Hughes

NTR, Vol 11, Nov 2009, 1254-1264