2011 ATCEM Burn Session: The Effects of Burning on IAQ and Your Health

Presented by: Patrick A. Bloecher, ANTHC
Bottom Line, Up Front

- Alaska Natives carry a high burden of respiratory disease.
- Poor indoor air quality can contribute to respiratory disease.
- Improving indoor air quality can have positive impacts on respiratory health.
Overview

- Sources of Indoor Air Pollution from Burning
- Indoor Air Pollution Health Effects
- Methods to Improve Indoor Air Quality
Overview

- Sources of Indoor Air Pollution from Burning
- Health Effects of Indoor Air Pollution
- Methods to Improve Indoor Air Quality
Candles & Fragrances

www.orthodoxcandles.com

www.cpsc.gov/cpscpub/prerel/prhtml02/02144a.jpg


Wood smoke can be a harmful indoor air pollutant.

What you burn matters.
Burning in a Wood Stove

**WHAT TO BURN**

- **Dry Wood**
  - Wood split and dried for 6-12 months

- **Kindling**
  - Wood scraps and occasionally small bits of newspaper

**WHAT NOT TO BURN**

- **Wet Wood**
- **Garbage**
- **Treated Lumber**
- **Saltwater Driftwood**
- **Glossy Paper**
- **Cardboard or Paper Wastes w/ Adhesives**
Older stoves may not burn efficiently.

Leaky stoves can cause higher levels of indoor air pollution.
Creosote can build up in a stove pipe.

Results in
- Fire hazard
- Shorter stove life
- Inefficient burn
What Causes Creosote Build Up?

- Restricted air supply
- Burning unseasoned wood
- Cooler chimney temperatures
Tobacco Smoke

- One of the most common sources of indoor air pollution.
- One of the most deadly indoor air pollutants.
Tobacco Smoke

- Single greatest avoidable cause of disease and death
- ~1 in 5 deaths is related to tobacco smoke
- > $193 billion/yr ($10 billion from SHS)
- U.S. consumers spent an estimated $90 billion in 2006 on tobacco products

Source: http://www.cdc.gov/tobacco/data_statistics/fact_sheets
Savings based on one to two packs a day:

- 1 Day: $8 - $16
- 1 Week: $56 - $112
- 1 Month: $240 - $480
- 1 Year: $2,920 - $5,840
Who smokes???
Who smokes???


Data Source: Alaska BRFSS
US Data Source: CDC BRFSS

- Alaska Natives
- Alaska Non-Natives
- U.S. all races
- Healthy People 2010 Goal

1991-92: 55%
1993-95: 50%
1996-98: 45%
1999-01: 40%
2002-04: 35%
2005-07: 41%

Healthy People 2010 Goal: 20%
Tobacco Use – Smoking


Data Source: Alaska BRFSS

All Alaska Natives: 41%
Alaska Non-Natives: 20%
U.S. all races (2007): 20%

Definition: Current smokers are adults who have smoked at least 100 cigarettes in their lifetime and currently smoke every day or some days.
Current Smokers by Age Group, Alaska Natives, 2005-2007

Data Source: Alaska BRFSS

Current Smokers by Gender, Alaska Natives, 2005-2007

Data Source: Alaska BRFSS
Tobacco Smoke

- Tobacco smoke is one of the most harmful indoor air pollutants.
- Exposure to tobacco smoke is preventable.

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Who is affected?

- Everyone, but especially children and elders.
Indoor air pollution has been associated with…

- Decreased lung function
- Cardiovascular disease
- Asthma
- Cancer
Health Effects from Tobacco

- Secondhand smoke is known to cause...
  - Coronary heart disease
  - Increased risk of heart attack
  - Lung cancer
  - Increased risk of Sudden Infant Death Syndrome
  - Wheezing
  - Coughing
  - Pneumonia
  - Asthma
  - Bronchitis
  - Ear Infection

http://www.who.int/tobacco/healthwarningsdatabase/tobacco
Cancer is the leading cause of death for Alaska Natives (1 out of every 5 deaths).

Heart disease is the second leading cause of death for Alaska Native people.

Limiting exposures to indoor air pollution can improve respiratory health for Alaska Natives.
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Methods for Improvement...

- Limit burning

- Candles & Fragrances:
  - Limit use of candles and fragrances in the home
  - When using candles & fragrances increase home ventilation
Wood Stoves

- Upgrade to an EPA certified wood stove
  - Burns more efficiently
  - Creates less smoke
  - Uses less wood

- If you can’t, BurnWise...
How to Burnwise...

Season (dry) wood before use...

1. Split – Split the wood down the middle
2. Stack – Keep the wood off the ground
3. Cover – Cover the wood from the elements
4. Store – Store the wood for at least 6 months
Wood Stoves

- Properly maintain stoves.
- Clean chimney stack at least once each year to prevent creosote buildup.

Tobacco Smoke

- Promote quit programs and help people to quit smoking.
- Advocate for tobacco policies in your communities.

howtoquitsmokingprogram.com
Advocate for the change you want to see in your communities.

Use outreach, education and promotion techniques to encourage healthy behavior.

Utilize resources (you are not alone!)
Resources

- ANTHC mini-grants for air quality projects.
- USDA grants for wood stove change-outs.
- BurnWise educational and promotional outreach materials. (www.epa.gov)
- Regional health organizations, clinics, schools, etc.
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Questions???