Occupational exposures to Vapors/Gas/Dust/Fumes (VGDF) and dust not otherwise specified (NOS): control strategies and policy needs

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Disclaimer

The content and conclusions of this presentation are those of the author and do not necessarily represent the views of the National Institute for Occupational Safety and Health.
What we’ll discuss (briefly)

• Why do we care?
• Control strategies
• Current limits--all over the place
• Challenges to improving policy & protections
Caution
Water on road during rain
Chronic obstructive pulmonary disease: Proportionate mortality ratio (PMR) adjusted for age, sex, and race by NORA industrial sector, U.S. residents age 15 and over, selected states, 1999

<table>
<thead>
<tr>
<th>NORA Industrial Sector</th>
<th>Number of Deaths*</th>
<th>PMR</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>LCL</td>
</tr>
<tr>
<td>Mining</td>
<td>1,104</td>
<td>1.7</td>
<td>1.6</td>
</tr>
<tr>
<td>Construction</td>
<td>4,288</td>
<td>1.2</td>
<td>1.2</td>
</tr>
<tr>
<td>Transportation, Warehousing, and Utilities</td>
<td>3,639</td>
<td>1.1</td>
<td>1.0</td>
</tr>
<tr>
<td>Healthcare and Social Assistance</td>
<td>2,683</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Agriculture, Forestry, and Fishing</td>
<td>2,790</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>10,657</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Wholesale and Retail Trade†</td>
<td>4,648</td>
<td>1.0</td>
<td>0.9</td>
</tr>
<tr>
<td>Services</td>
<td>13,184</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>Decedents with unclassified industry</td>
<td>14,080</td>
<td></td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>57,073</strong></td>
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</table>
Self-Reported Work-Related Exacerbation of Adult Asthma

- USA, all adults: 15%
- USA, working adults: 21%
- Australia: 20%
- Norway, Female: 18%
- Norway, Male: 33%

USA, Australia, and Norway are the countries mentioned in the graph.
QUALITY OF LIFE

Obstructive airways disease significantly impairs quality of life in adults. The reduction in quality of life in these patients is related to both baseline pulmonary function and non-specific bronchial responsiveness. The impact of airways obstruction on quality of life does not decrease with advancing age.

Marrenwick & Connolly, Thorax 1996;51:520
History of prevention

All dusts

Cotton, Silica

PNOC/PNOR

Coal, Asbestos
Current Limits PNOC/R--respirable (recommended & enforceable)

- US OSHA: 5 mg/m³ respirable dust (General industry; not established for Construction)
- ACGIH: 3 mg/m³ respirable dust (TLV) (recommended)
- UK HSE: 4 mg/m³ respirable dust
- Germany: 3 mg/m³ respirable dust
- Switzerland: 6 mg/m³
- Lithuania: 10 mg/m³
- US NIOSH: NO REL
- REL for PNOC
- Australia: 10 mg/m³ inhalable (enforceable)
  - AIOH recommendations: 5 mg/m³ inhalable; 1mg/m³ respirable
Policy & regulatory challenges

• In the US, efforts at broad regulatory approaches have failed
  – OSHA Carcinogen rule successfully challenged
  – “PEL updates” successfully challenged
• Regulatory Process requires data to show
  – Significant harm at current level
    • Morbidity less compelling than mortality
  – Substantial benefit at new level
  – Technical and economic feasibility
• Resistance to use of environmental data for workplace standard-setting
• Political obstructions to improved regulations
I didn't have any accurate numbers so I just made up this one.

Studies have shown that accurate numbers aren't any more useful than the ones you make up.

How many studies showed that?

Eighty-seven.
CONCLUSIONS

What is to be done?
“Cleanliness is next to Godliness”

--Mother
Give a damn.