

Pollution and Disease (preliminary)

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Green Delaware

www.greendel.org

What do we know?

- Air and water and land pollution can cause people to sicken and die
- Delaware is polluted
- Delaware is unhealthy

Infant mortality in Delaware

- “Since mothers and infants are among the most vulnerable members of society, infant mortality is a measure of a population’s health. In addition, disparities in infant mortality by race/ethnicity and socioeconomic status are an important measure of the inequalities in a society.”
- **“Despite great national wealth, the U.S. ranks 27th among industrialized countries in infant mortality.”**

(<http://www.dhss.delaware.gov/dhss/dph/files/infantmortalityreport.pdf>)

Infant mortality rates

- 1. Singapore 2.5
- 2. Hong Kong 3.0
- 3. Japan 3.2
- 4. Sweden 3.4
- 5. Finland 3.8
- 6. Norway 3.8
- 7. Spain 3.9
- 8. Czech Republic 4.1
- 9. Germany 4.4
- 10. Italy 4.5
- 11. France 4.6
- 12. Austria 4.8
- 13. Belgium 4.8
- 14. Switzerland 4.9
- 15. Northern Ireland 5.1
- 16. Netherlands 5.1
- 17. Australia 5.2
- 18. Canada 5.3
- 19. Denmark 5.3
- 20. Israel 5.4
- 21. Portugal 5.5
- 22. England and Wales 5.6
- 23. Scotland 5.7
- 24. Ireland 6.2
- 25. Greece 6.1
- 26. New Zealand 6.3
- 27. **United States 6.9**

Delaware has the sixth worst infant mortality rate in the nation.

- **STATE IMR (PER 1000) LOW BIRTH WEIGHT (%)**
- 38. New Jersey 6.3 8.0
- 22. Pennsylvania 7.3 7.9
- 14. Maryland 8.0 8.9
- **6. Delaware 9.1 9.0**
- 5. South Carolina 9.3 9.7
- 4. Louisiana 9.5 10.3
- 3. Alabama 9.6 9.6
- 2. Mississippi 10.4 10.6
- 1. District of Columbia 12.3 12.3
- **U.S. TOTAL 7.0 7.6**
- *Ranking of Five-Year Average Percentages of Infant Mortality and Low Birth Weight Births for*
- *the U.S., 50 States and District of Columbia, 1998-2002*
- *Source: National Center for Health Statistics and Delaware Health Statistics Center.*

The “big picture”

- “Pollution has been linked to about 200 different diseases, ranging from cerebral palsy to testicular atrophy, as well as more than 37 kinds of cancer, startling US research shows.”

More of the “big picture”

- “More than 120 diseases have been definitively linked to pollution, and in another 33 evidence of a link is judged to be “good”. For the rest the evidence is “limited”.”

- “Nine different pollutants have been "verified" to cause asthma - including four from car exhausts, the subject of an Independent on Sunday campaign - the study shows. Testicular atrophy is caused by oestrogen, increasingly found in British rivers that supply drinking water. Mercury poisoning can cause cerebral palsy, while more than 50 pollutants - ranging from dioxins to PCBs - have been shown to cause cancer.”

- “Other effects include: kidney disease, heart disease, hypertension, diabetes, dermatitis bronchitis, hyperactivity, deafness, sperm damage and Alzheimer's and Parkinson's diseases.”

The politics.....

- “The European Commission has been trying to introduce a new directive requiring industry to provide safety information on the 30,000 most common chemicals, but this measure has been watered down because of **pressure from the Bush administration.**”

Source for previous quotes:

- *Published on Sunday, November 14, 2004*
by the [Independent](#) / **UK US Study Links
More Than 200 Diseases to Pollution by
Geoffrey Lean**

**([http://www.commondreams.org/headline
s04/1114-20.htm](http://www.commondreams.org/headlines04/1114-20.htm))**

- **Chemical Contaminants and Human Disease: A Summary of Evidence**
- Sarah Janssen MD, PhD
Gina Solomon MD, MPH¹
Ted Schettler MD, MPH²
- <http://www.protectingourhealth.org>

Causes of Asthma (“strong evidence”)

- Note that residents of the East side of Wilmington are heavily exposed to the last five!

Acids,
Ammonia,
Chlorine,
Cotton dusts,
Diesel engine exhaust,
Hydrogen sulfide,
Nitrogen dioxide,
Ozone,
Sulfur dioxide

Causes of Asthma (“good evidence”)

Chloramine,

Hydrazine,

Oil fly ash,

Organophosphate and n-methyl carbamate pesticides,

Osmium tetroxide,

Particulate matter,

Phosgene,

Tobacco Smoke

- “The World Health Organization recommends a NO₂ annual average exposure of 40 µg/m³ as a safe threshold for public health. This study found significant adverse effects of NO₂ at concentrations as low as 14 µg/m³ on asthmatic children with viral infections. These observations suggest that exposure standards for NO₂ should be lowered. **Decreasing exposures will both benefit asthmatics and decrease health costs.**”

Source:

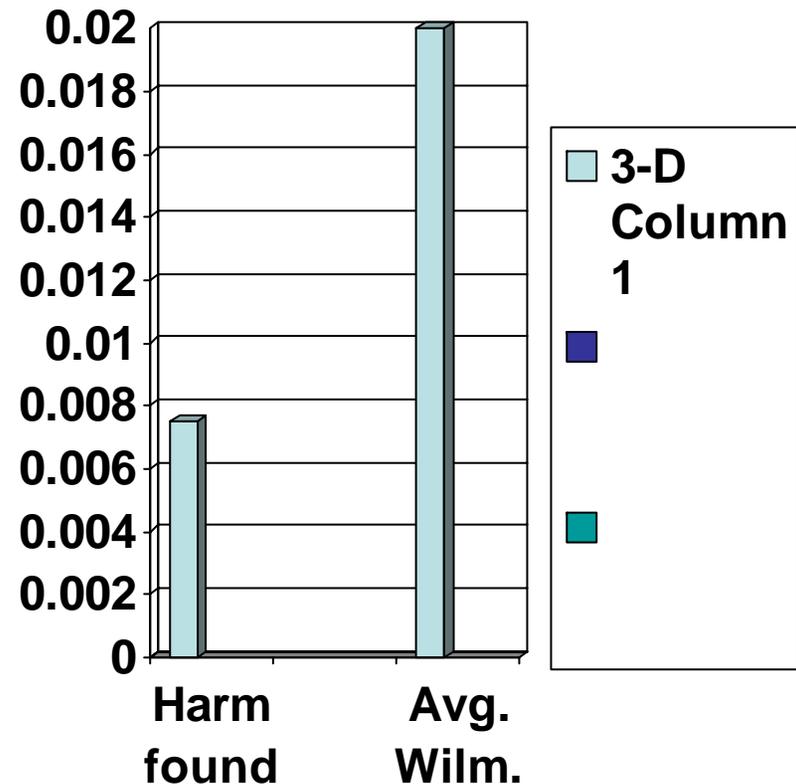
- Chauhan, AJ, HM Inskip, CH Linaker, S Smith, J Schrieber, SL Johnston, and ST Holgate. 2003. **Personal exposure to nitrogen dioxide (NO₂) and the severity of virus-induced asthma in children.** [Lancet 361: 1939-44.](#)
- <http://www.protectingourhealth.org/newscience/asthma/2003/2003-0601chauhanetal.htm>

NO₂ NAAQS is not protective of sensitive populations

- US NAAQS for NO₂ is 0.053 ppm
- Equivalent to $(46 \times .053)/24.45 = .0997$ mg/M³ = 100 μ/m³
- Harmful effects found at 14 μg/m³
- = .0075 ppm

NOx in Delaware

- Average levels in Wilmington from 2001 to 2004 were 0.020 ppm
- Harmful effects were found at 0.0075 ppm



The Point

Delaware officialdom is focused on NO_x as an “ozone precursor,” because Delaware is in “non-attainment” of the national air quality standard (NAAQS) for ozone, but there is good reason to see NO_x itself as a problem.

What about Delaware?

- “The Burden of Asthma in Delaware”
Delaware Health and Social Services and
DNREC
- August 2005
- <http://www.dhss.delaware.gov/dhss/dph/dpc/asthma.html>
- “Report Highlights,” October 8, 2005

Delaware asthma facts:

- Children under age 4 are more than twice as likely to be hospitalized with asthma than any other age group. They are about 4 times as likely to have an asthma-related hospitalization than adults.
- The report estimates about 3,000 asthma-related hospitalizations of young children a year.

- “In Delaware, African American residents are hospitalized because of asthma at rates nearly three times greater than whites.”

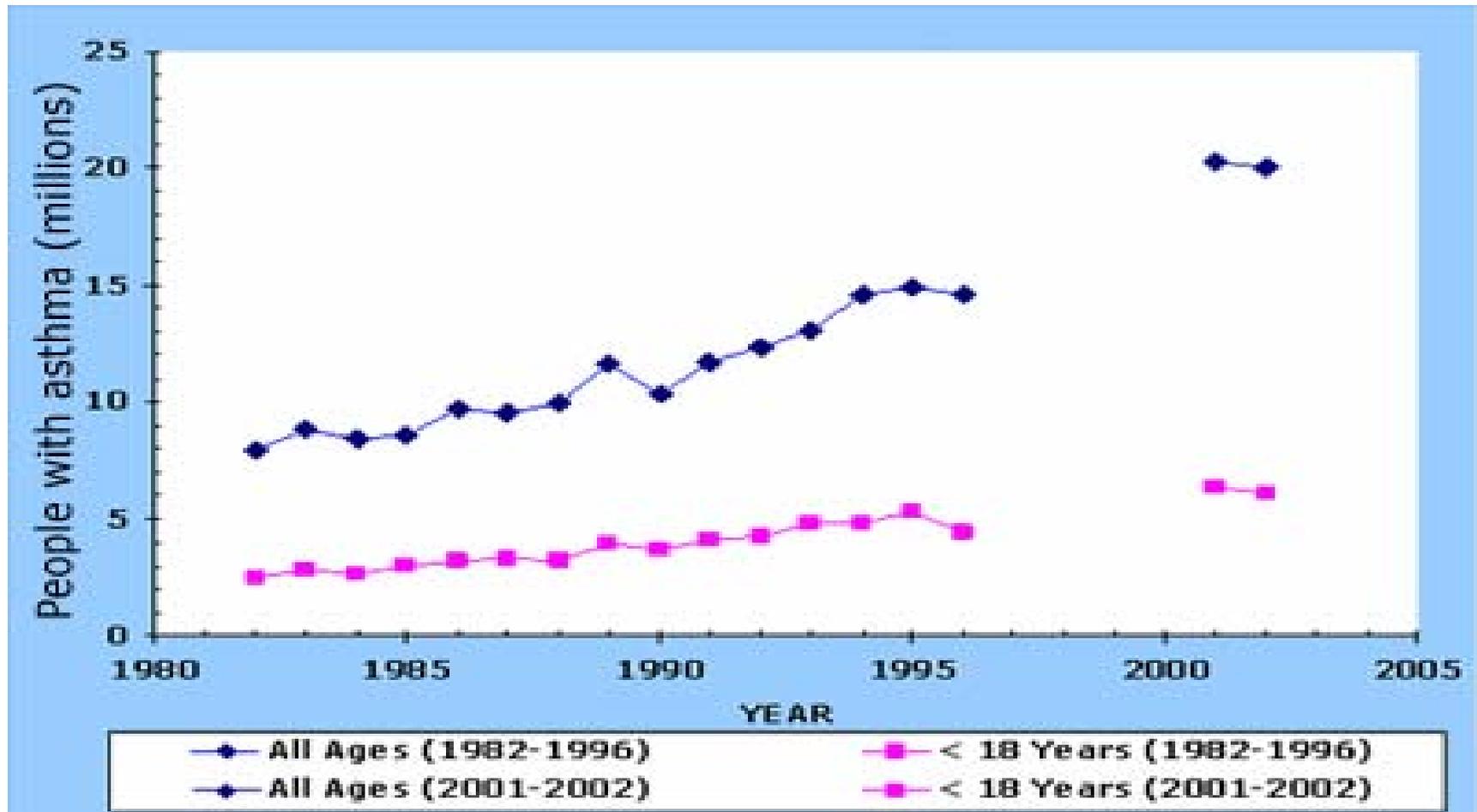
- In 2000 and 2001, the most recent years for which data are available, there were 17 deaths per year from asthma in Delaware.

- In 2003, 11.7% of Delaware adults (about 72,000) reported having asthma at some time during their lives, according to the Delaware Behavioral Risk Factor Survey. About 7.5% (or 46,000 adults) currently have asthma.
- [7.5 percent of Delaware's present population is 63264].

Official statement: (Delaware DPH/DNREC)

- “From this graph [2000-2003], it is clear that Delaware and U.S. rates—both lifetime and current—have tracked quite closely over this four-year period and are quite stable.”

Source: American Lung Assoc.



“The Collaborative on Health and Environment”

- “The number of children and the total number of people with asthma in the U.S. has **more than doubled** since 1980. ... Comparing children hospitalized for asthma in California in 1993 and 1986, children in 1993 were **twice as likely to experience an adverse outcome** (such as having a breathing tube inserted into the windpipe, having normal breathing and heart functions stop, and death) compared with children hospitalized there seven years earlier.”

More numbers game

- **“The 11.7% of adults with lifetime asthma is very close to the national estimate of 10.8% from the NHIS...”**
(from the 2005 report)
- Most reporters and officials will stop here....
- But lets take a look at what this means....

Numbers ...

- The population of Delaware is 843,524 (2005 estimate, Bureau of Census)
- 10.8 percent of this is 91101
- 11.7 percent of this is 98692
- **The difference is 7591 people who have had asthma in Delaware who WOULD NOT if our rate was actually the same as the national estimate**

“Delaware’s prevalence is the same as the national prevalence for 2003.”

“The Burden of Asthma in Delaware”

Report Highlights, October 8, 2005

(http://www.dhss.delaware.gov/dhss/dph/dpc/files/asthmaburden_highlights.pdf)

**Are those 7591 people
invisible for some
reason?**

Pre Term Delivery

- **Exposures to Air Pollutants during Pregnancy and Preterm Delivery**

Jong-Han Leem,^{1,2} Brian M. Kaplan,³ Youn K. Shim,³ Hana R. Pohl,² Carol A. Gotway,⁴ Stevan M. Bullard,³

J. Felix Rogers,⁵ Melissa M. Smith,³ and Carolyn A. Tylenda²

(<http://www.ehponline.org/members/2006/8733/8733.pdf>)

“Our study showed that statistically significant effects of PTD are seen below the air quality standards for CO and NO₂ and potentially below the standards for PM₁₀ and SO₂. Our study may provide supportive evidence that reduction in the current air quality standards may improve pregnancy outcomes.”

Oxone air standards

Korea

- NO₂ 94 ug/M³

US

- NO₂ 100 ug/m³

Environmental Standards

- What is a standard and what does it mean?
- National Ambient Air Quality Standards
- Established for 6 substances
- But there are about 20 million “chemicals”

What can be done?

- Cleaner air and water = healthier people

From: DNREC Ozone Alerts List <dnreclist@state.de.us>
To: DNREC Ozone Alerts List <dnreclist@state.de.us>
Subject: Code Orange Ozone Advisory Thursday, June 22, 2006

Code Orange Ozone Advisory

Called For Thursday, June 22, 2006

Thursday will be a bad ozone day for sensitive groups.

Ground-level Ozone is forecasted to be at unhealthful levels for sensitive children and adults and people with respiratory ailments. This is not a notification for an Ozone Action Day, but the ozone levels are expected to rise to a level that is still important to your health and well-being.

DNREC trying to clean up power plants

Who is for the cleanup?

- Green Delaware
- Citizens for Clean Power
- Delaware Audubon Society

Who is against the cleanup?

- Conectiv Energy
- NRG Systems
- City of Dover
- Delaware Economic Development Office
- Delaware State Chamber of Commerce
- International Brotherhood of Electrical Workers

Arsenic soil levels

- Raised by DNREC under pressure from developers
- Senate Bill 68 (Senator Sokola) would lower them to six parts per million
- **ACTION:** Call your legislator!

Dirty Solid Waste Authority

- Opposes recycling
- Promoting another garbage incinerator
- House Bill 8 would increase dumping at Cherry Island
- Representative Wayne Smith

Precautionary Principle

- Deal with problems before rather than after they kill us.

Where Is the Delaware Division
of Public Health when
pollution/health issues are being
debated?

**Generally absent or
silent...**

Should we consider this
acceptable?

Assessing the Public Health System in Delaware 10 Essential Health Services

are:

[From the DPH website]

- Monitor health status to identify and solve community health problems.
- Diagnose and investigate health problems and health hazards in the community.
- Inform, educate and empower people about health issues.
- Mobilize community partnerships and action to identify and solve health problems.
- Develop policies and plans that support individual and community health efforts.
- Enforce laws and regulations that protect health and ensure safety.
- Link people to needed personal health services and assure the provision of health care when otherwise unavailable.
- Assure competent public and personal health care workforce.
- Evaluate effectiveness, accessibility, and quality of personal and population-based health services.
- Research for new insights and innovative solutions to health problems.

The People need to speak out

- Get active or get screwed....
- Governor Minner's office:1.800.292.9570
- Your State Senator and Representative
- Your City and County councilcritter