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# Highlights from the 1999 Annual Reports on Occupational Diseases in Michigan

Five annual reports were released this summer: Occupational Noise-Induced Hearing Loss; Silicosis; Work-Related Asthma; Occupational Diseases; and Elevated Blood Lead Levels Among Adults. This edition of the Project SENSOR Newsletter contains a summary and selected tables from these reports. If you would like a copy of any of the reports, please visit our web site at: http://www.chm.msu.edu/oem/index.htm. Instructions on how to download the reports can be found at the web site. If you prefer, we will send you a printed copy. To request a printed copy of any of the reports, return the enclosed postage paid post card or call us at 1-800-446-7805.

### --OCCUPATIONAL DISEASES IN MICHIGAN--

The Michigan Department of Consumer and Industry Services (MDCIS) received a total of 21,538 occupational disease reports in 1999. This was higher than the 20,754 reports received in 1998. The types of diseases reported differs by whether the report was submitted by a company or non company health practitioner. Company reports tend to be related to cumulative trauma conditions such as carpal tunnel syndrome or repetitive strain conditions. In contrast, non company reports cover a wide variety of conditions from noise-induced hearing loss to lung disease. Multiple reporting sources are needed to ensure the full reporting of all occupational diseases.

### Number of Occupational Disease Reports by Disease Type and Reporting Source (adapted from Table 4, 1999 Annual Report on Occupational Diseases in Michigan)

Disease type	Non Comp	pany Reports	Company #	Reports %
Infectious/Parasitic	0		29	0.2
Cancer	72	1.0	1	< 0.1
Mental Disorders	0		575	4.0
Nervous System/Sense Organs	857	11.8	1,691	11.9
Circulatory System	0		3	< 0.1
Respiratory System	5,219	71.6	63	0.4
Digestive System	0		25	0.2
Skin	45	0.6	1,181	8.3
Musculoskeletal System	44	0.6	1,419	10.0
Signs and Symptoms	41	0.6	411	2.9
Repetitive Trauma	12	0.2	8,551	60.0
Welding Flash	0		111	0.8
Toxic Effects (Non-Medicinal)	_995	13.7	193	1.4
TOTAL	7,285	100.0	14,253	100.0

### --ELEVATED BLOOD LEAD LEVELS AMONG ADULTS IN MICHIGAN--

There were 3,508 more blood lead reports received on 3,111 individuals in 1999 compared to 1998. The total number of reports received in 1999 was 10,442 reports on 9,484 individuals  $\geq$  16 years of age. There was a decrease: in the percentage of individuals with blood lead levels (BLLs) greater than 10 ug/dL from 14.4% (919 reports) to 10.6% (1,006 reports); in the number and percentage of individuals with BLLs greater than 25 ug/dL from 303 (4.8%) to 273 (2.8%); and in the number and percentage of individuals with BLLs greater than 50 ug/dL from 31 (0.5%) to 11 (0.1%).

There was a statistically significant trend in the increase of symptoms for adults with BLLs >30 ug/dL.

## Symptoms of Michigan Adults with Blood Lead Levels (BLL) $\geq$ 25 ug/dL, by Highest Reported BLL

(adapted from Table 21, 1999 Annual Report on Adult Blood Lead Levels in Michigan)

	Highest Blood Lead Level* (ug/dL)						
<u>Symptom</u>	<u>25-29</u>	<u>30-39</u>	<u>40-49</u>	<u>50-59</u>	<u>60+</u>	<u>X</u> <sup>2</sup>	
Gastrointestinal	8 (13.3)	38 (28.1)	20 (47.6)	9 (47.4)	2 (33.3)	13.1 (p=.000)	
Musculoskeletal	17 (28.8)	59 (43.7)	28 (66.7)	9 (50.0)	4 (66.7)	10.8 (p=.001)	
Nervous System	28 (46.7)	91 (67.9)	32 (76.2)	15 (78.9)	4 (66.7)	8.75 (p=.003)	
Reproductive System	5 (8.3)	13 (9.8)	3 (7.5)	2 (10.5)		0.08 (p=.778)	
Any Symptom	37 (61.7)	99 (73.3)	35 (83.3)	18 (94.7)	4 (66.7)	7.35 (p=.007)	
Avg. # Symptoms	1.7 (n=60)	3.2 (n=135)	4.7 (n=42)	4.2 (n=19)	4.5 (n=6)		

<sup>\*</sup>Number, percent in parentheses.

### --OCCUPATIONAL NOISE-INDUCED HEARING LOSS IN MICHIGAN--

Of the 2,119 reports of work-related noise-induced hearing loss (NIHL) received in 1999, 1,273 were submitted by company medical departments and 846 reports were submitted by practicing audiologists and otolaryngologists in the state. Construction workers (for example, those using jack a hammer) are not required to be enrolled in a comprehensive hearing conservation program. This is reflected in the lack of hearing tests provided to construction workers. This contrasts with manufacturing, where 80% of the individuals report that they are provided with regular hearing tests.

Most Recent Decade Where 308 Patients with NIHL were Exposed to Noise in Construction, and Status of Regular Hearing Tests and Use of Hearing Protection (adapted from Table 17, 1999 Annual Report on Occupational NIHL in Michigan)

<u>Decade</u>	% Not Given <u>Regular Hearing Tests</u>	% Not Given <u>Hearing Protection</u>
1940s	100	100
1950s	100	83
1960s	100	100
1970s	91	81
1980s	93	66
1990s	95	33
2000	100	25

### --SILICOSIS IN MICHIGAN--

There were 62 new reports of silicosis in 1997, the most recent year where complete reporting is available. Individuals reported generally have severe disease; 25% have progressive massive fibrosis and another 34% have advanced simple silicosis. Sixty percent have reduced pulmonary function results including obstructive and restrictive changes. Obstructive changes, though more common among individuals who also smoke cigarettes are also common in individuals who never smoked cigarettes.

## Ratio of Forced Expiratory Volume in 1 Second (FEV<sub>1</sub>) Divided by Forced Vital Capacity (FVC) by X-Ray Results and Cigarette Smoking Status (adapted from Table 4, 1999 Annual Report on Silicosis in Michigan)

FEV <sub>1</sub> /FVC							
	$\leq 40\%$	41-59%	60-74%	≥75%			
	Ever* Never	Ever Never	Ever Never	Ever Never			
X-Ray Results	Smoked Smoked	Smoked Smoked	Smoked Smoked	Smoked Smoked			
Biopsy	2 (12) 1 (33)	3 (19) 0	5 (31) 2 (67)	6 (38) 0			
Unknown	0 0	0 0	1 (13) 2 (67)	7 (89) 1 (33)			
Category 1	16 (10) 2 (5)	33 (21) 3 (7)	59 (37) 13 (30)	50 (32) 26 (59)			
Category 2	3 (3) 2 (5)	18 (21) 5 (13)	37 (43) 11 (28)	29 (33) 21 (54)			
Category 3	1 (3) 1 (6)	5 (16) 0	5 (16) 5 (28)	20 (65) 12 (67)			
PMF	13 (15) 4 (10)	24 (28) 9 (21)	27 (32) 13 (31)	21 (25) 16 (38)			
Total	35 (9) 10 (7)	83 (22) 17 (11)	134 (35) 46 (31)	133 (35) 76 (51)			

<sup>\*</sup>Number, percent in parentheses.

### --WORK-RELATED ASTHMA IN MICHIGAN--

We receive on the average 148 reports of newly diagnosed work-related asthma each year. Eighty-eight percent are new onset asthma while 12% are aggravation of pre-existing asthma. Isocyanates and metal working fluids remain the most common causes. It is interesting to note the high incidence of asthma among individuals who work in schools and speculate if there is any relationship with the rise of asthma among children.

## Annual Incidence of Work-Related Asthma by Primary Industrial Exposure (adapted from Table 4, 1999 Annual Report on Work-Related Asthma in Michigan)

<u>Industry</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>
Food Manufacturing Rubber Manufacturing Foundries Industrial Equipment Mfg. Auto Manufacturing Health Care Services Educational Services Government	20.0 9.3 9.5 6.3 19.0 1.6 <b>5.4</b> 8.1	6.7 19.6 23.7 1.7 15.6 1.9 <b>5.3</b> 6.6	2.3 8.1 6.1 28.7 3.4 <b>8.1</b> 7.9	7.3 19.4 8.5 26.5 3.6 <b>21.1</b> 14.3	2.3 11.3 18.9 6.6 25.0 3.8 7.7 6.3	4.4 15.1 5.4 3.0 17.3 3.7 <b>10.2</b> 1.1	6.8 10.4 18.9 3.0 21.1 3.3 <b>18.6</b> 0.8	4.9 13.2 8.1 2.2 21.1 6.3 <b>20.5</b> 0.5
Total (ALL industries)	3.4	2.8	3.5	4.0	3.4	3.0	3.3	3.2

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### Michigan Law Requires the Reporting of Known or Suspected Occupational Diseases

Reporting can be done by:

\*FAX (517) 432-3606 \*Telephone 1-800-446-7805 \*E-Mail Rosenman@msu.edu \*Mail Michigan Department of Consumer and Industry Services Division of Occupational Health P.O. Box 30649 Lansing, MI 48909-8149

Reporting forms can be obtained by calling (517) 322-5208 or 1-800-446-7805. \*Project News

Michigan State University College of Human Medicine 117 West Fee Hall East Lansing, MI 48824-1316 Phone (517) 353-1955

Address service requested.

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\*P<sub>S</sub> Remember to report all cases of occupational disease!

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