

Three case reports: Michigan Manufacturing

1. Isocyanate asthma
2. Lead
3. (if time) a “cross-cutting” story

ISOCYANATE-INDUCED ASTHMA IN MICHIGAN

**351 Cases of isocyanate-
induced asthma 1988-
2005**

2 deaths

**15% of WRA in MI is due
to isocyanates**

-MDI, TDI, HDI, NDI

**Auto Manufacturing major
source of WRA
exposure to
isocyanates**



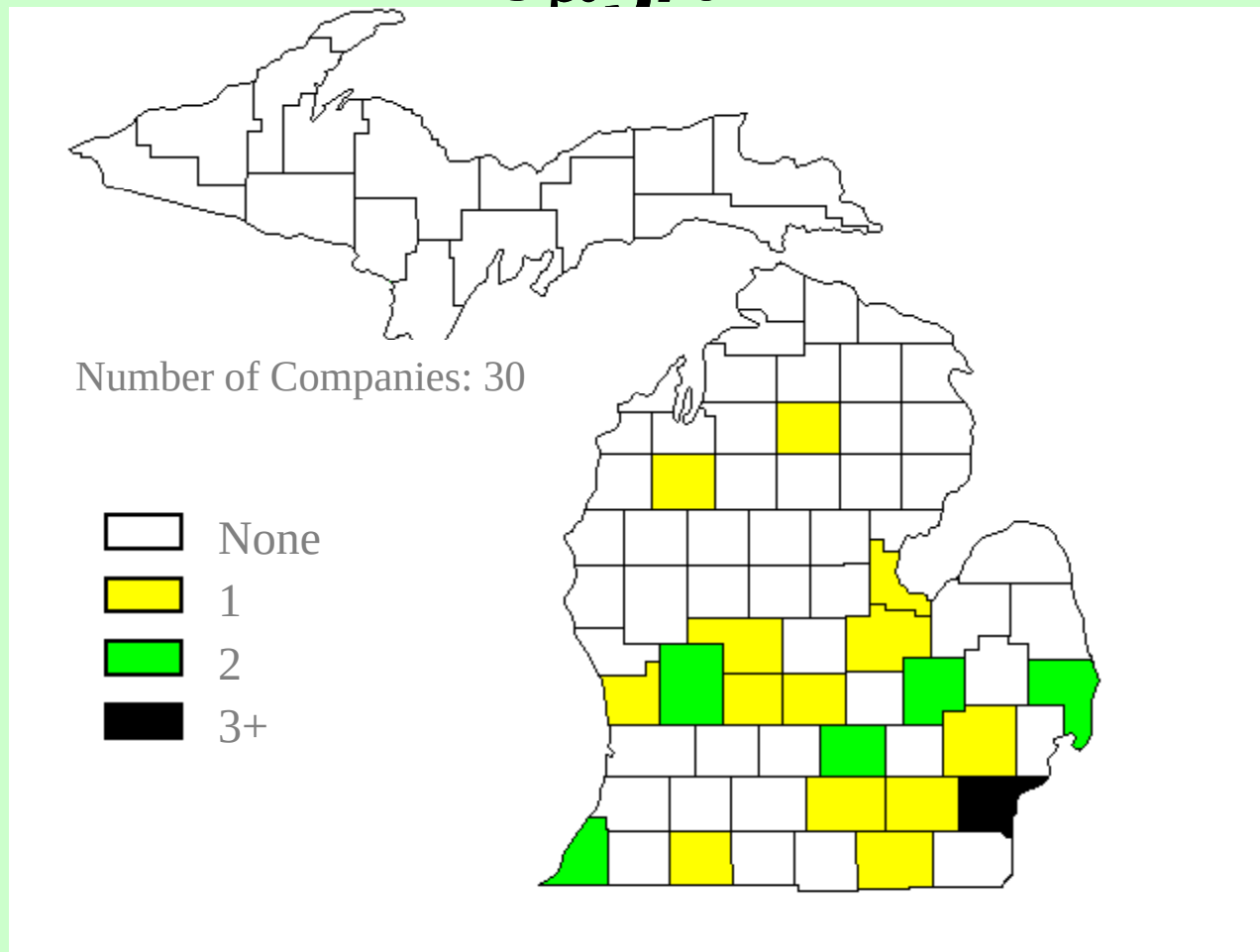
MIOSHA INSPECTIONS for Isocyanates 1988-2006

- **Air sampling at 69 companies: None above federal/state OSHA standard**
- **Co-worker breathing symptoms (59 of 69 companies)**
 - **1,017 interviewed**
 - **22% with daily/weekly SOB, wheezing or chest tightness at work**

Impact on Standard Setting

- Rules in adoption process
 - Approved by MI Occupational Health Standards Commission
- Requirements
 - Medical surveillance
 - Worker education

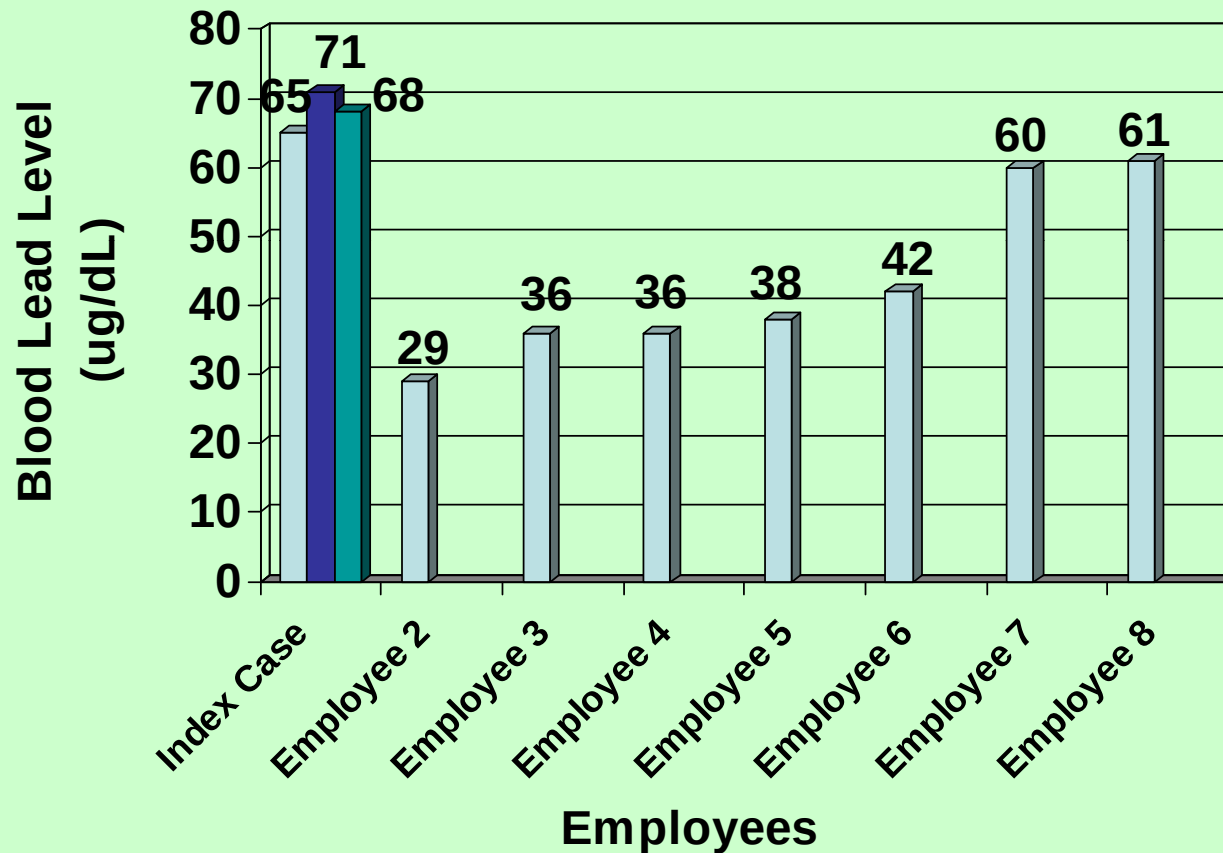
Geographic Distribution of Non-Construction Companies Reporting Adults with Blood Lead Levels (BLLs) $\geq 25\mu\text{g/dL}$



Brass Foundry



Foundry: Blood lead levels



Foundry OSHA inspection results (1 of 2)

Lead standard: \$4000

Standard	Type	Penalty
LEAD, PART 310		
Rule 3(1): Airborne concentrations	Serious	\$1500
Rule 6: Exposure monitoring; initial determination	Serious	Abated
Rule 15(1): Methods of compliance; program	Serious	\$0
Rule 16a(1):Methods of compliance; mech vent	Serious	\$0
Rule 17(2): Respiratory protection program	Serious	\$500
Rule 17: Respiratory protection	Serious	\$0
Rule 22: Protective clothing & equip.; provision & use	Serious	\$0
Rule 24(3): Labeling of containers	Serious	\$0
Rule 26: Housekeeping; floor cleaning; vacuuming	Serious	\$0
Rule 29(1): Hygiene facilities; change rooms	Serious	\$0
Rule 32(1): Medical surveillance generally	Serious	\$1500
Rule 49(2): Employee info & training; training program	Serious	\$500
Rule 50(1): Access to info & materials	Serious	\$0

Foundry OSHA inspection results (2 of 2)

Other violations: \$1,700

Standard	Type	Penalty
CADMIUM, PART 309		
Rule 5(1)	Serious	Abated
Rule 18(1)	Serious	\$0
Rule 30(1)	Serious	\$0
Rule 30(3)	Serious	\$0
OCC NOISE EXPOSURE, PART 380		
Rule 7(1)	Serious	\$1500
AIR CONTAMINANTS, PART 301		
Rule 3(a)(iii)	Other	\$0
RESPIRATORY PROTECTION, PART 451		
1910.134(c)(1)	Other	\$0
HAZARD COMMUNICATION, PART 430		
1910.1200(e)(1)	Other	\$200
TOTAL Penalties: Lead and Other		\$5700

Foundry follow-up

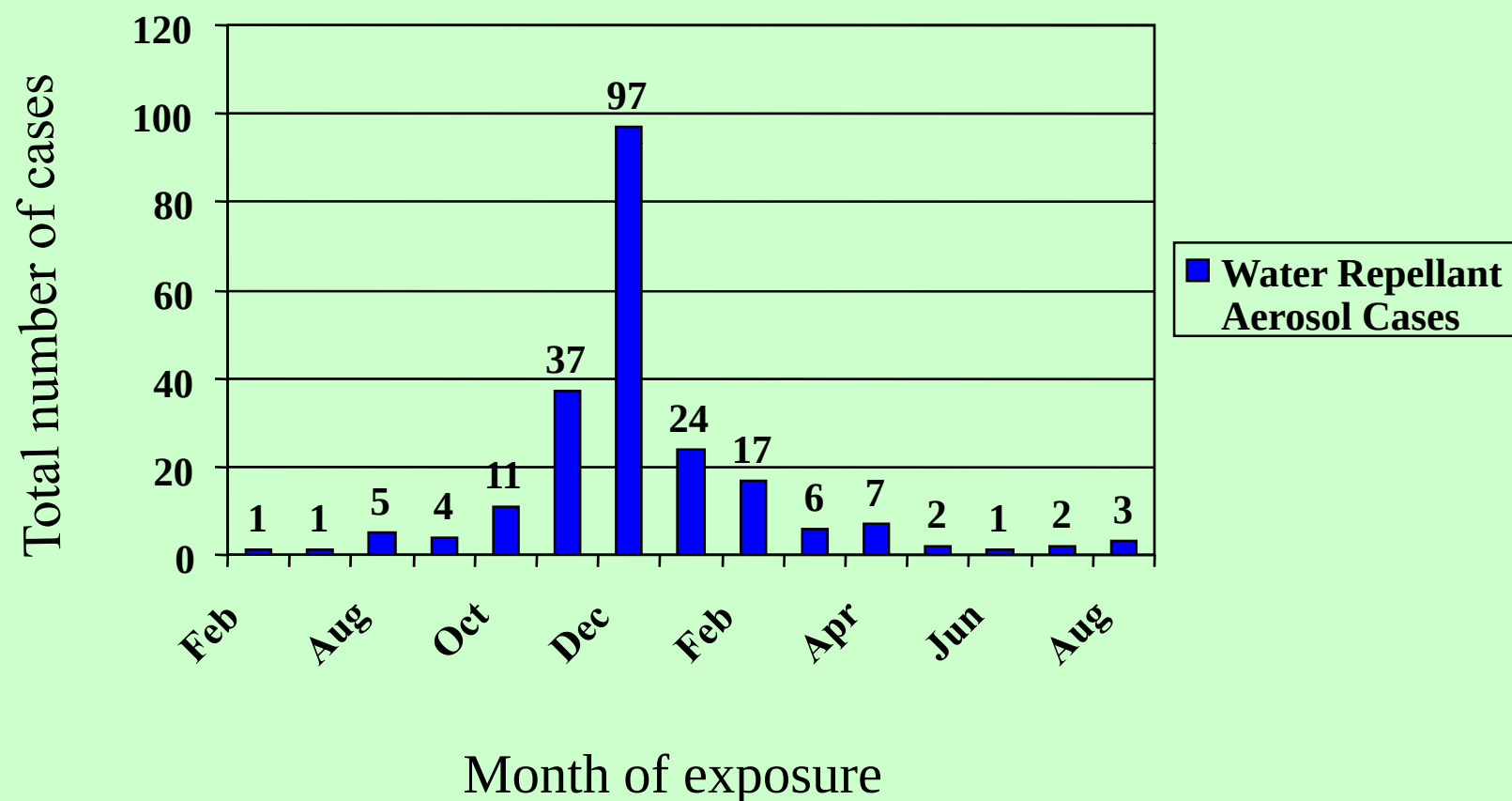
- Airborne lead levels much lower
- Employees still with elevated BLL but lower (2 still >40; all 20-30% lower)
- But still problems

Cross-cutting story

Chemical Pneumonitis Outbreak



2005-2006 waterproofing cases-5 states N=217(110 MI) (7 occupational – 5 in MI)



Involved agencies

- MDCH
 - 4 other health departments
- Detroit poison control center (PCC)
 - 4 other PCCs
- Consumer Product Safety Commission
- NIOSH
- Ontario Ministry of Labor
- OSHA
- Manufacturers (ON & NY) and distributor (MI)

Cause of illnesses?

- Combination of fluoropolymer resin and solvent?
- Particle size?
- Aerosol pressure?

Public health actions

- Health alert to public health: MIHAN & Epi-X
- Voluntary recall by distributor in MI
- Health alerts by MDCH posted/disseminated
 - (www.michigan.gov/mdch-toxics)
- CPSC: No product defect found!
- Letter to CPSC signed by MDCH director
- On-going surveillance – PCC and MDCH
- Smolinske et al. Brief Report: Respiratory illness associated boot sealant products – five states, 2005-2006. MMWR May 5, 2006 /55(17)488-490.