

The Manufacturing Sector

CSTE Occupational Health Surveillance Work Group

March, 2007



Workplace Safety and Health



What I will cover

- The Manufacturing Sector
- The NORA sector council
- Interim goals/research needs
- Surveillance needs and intervention priorities

By the Numbers.....

- 11% of total US employment
- 14% of the US GDP
- 109% increase in productivity
- 21% of all industry injuries
- 38.8% of all industry illnesses

Dept of Commerce and Bureau of Labor Statistics data

Manufacturing: NAICS code 31

- **311 --- Food Manufacturing**
- **312 --- Beverage + Tobacco Products Mfg**
- **313 ---Textile Mills**
- **314 --- Textile Product Mills**
- **315 --- Apparel Manufacturing**
- **316 --- Leather + Allied Prod. Mfg**

Est. 4.1 million workers in 2005 (BLS)

Manufacturing: NAICS code 32

- **321 --- Wood Product Mfg.**
- **322 --- Paper Manufacturing**
- **323 --- Printing + Related Support Activities**
- **324 --- Petroleum + Coal Products Mfg**
- **325 --- Chemical Manufacturing**
- **326 --- Plastics + Rubber Products Mfg**
- **327 --- Nonmetallic Mineral Product Mfg**

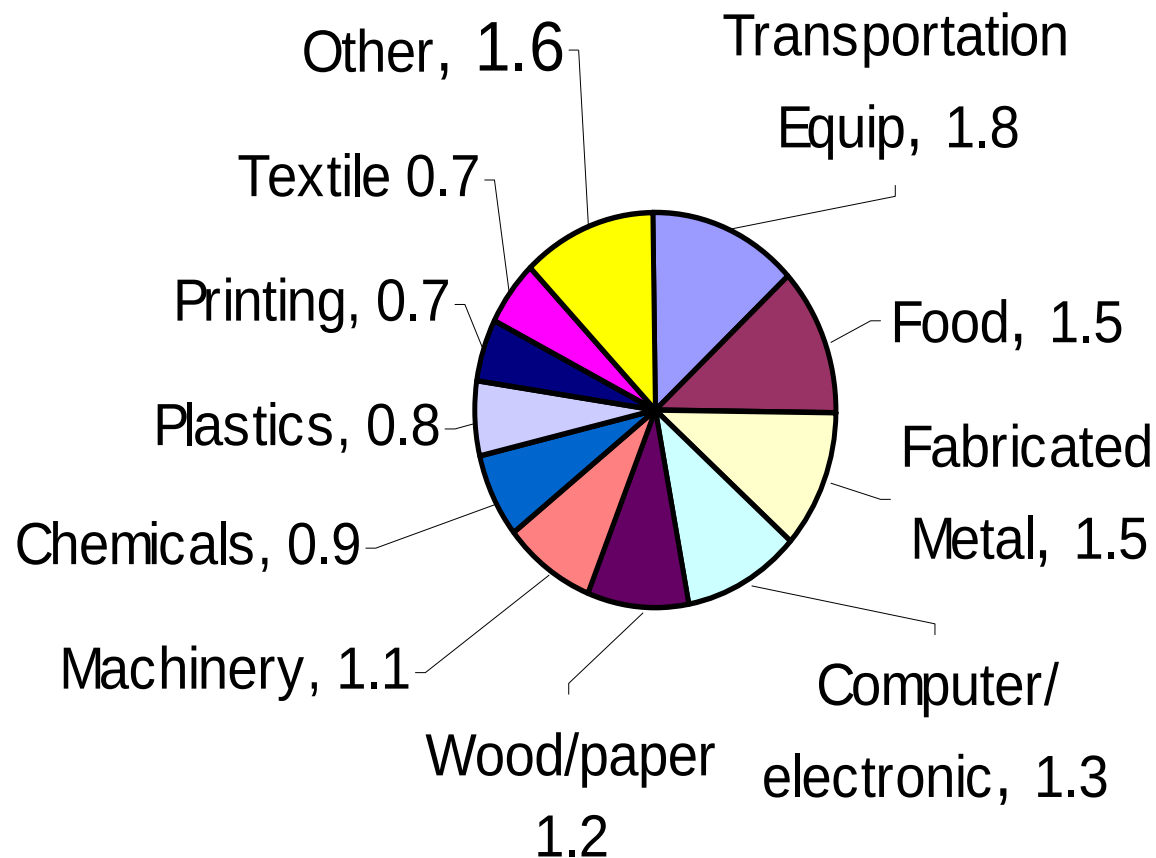
Est. 4 million workers in 2005 (BLS)

Manufacturing: NAICS code 33

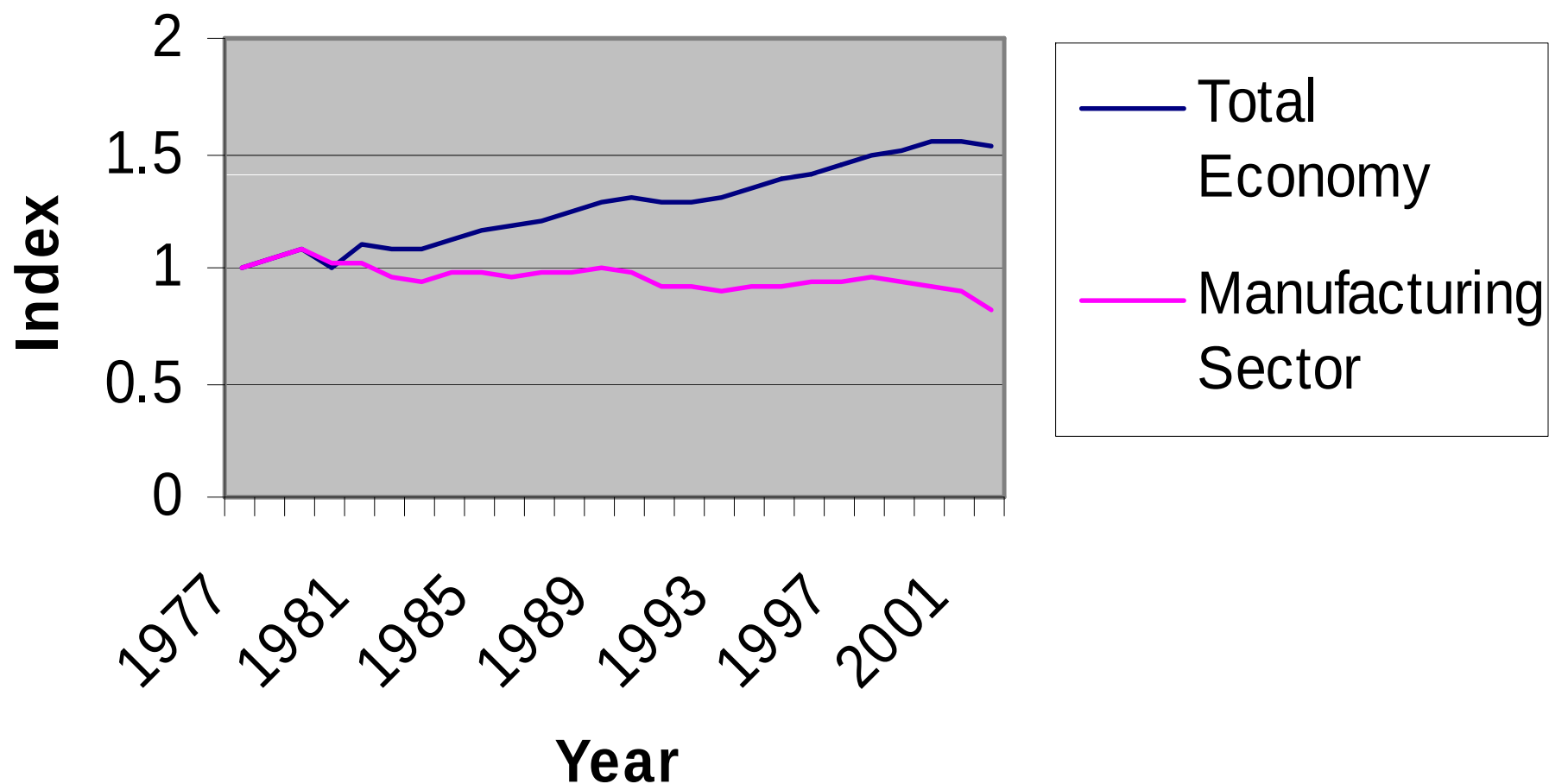
- **331 --- Primary Metal Manufacturing**
- **332 --- Fabricated Metal Prod Mfg**
- **333 --- Machinery Manufacturing**
- **334 --- Computer + electronic Prod Mfg**
- **335 --- Electrical Equip + Appliance Mfg**
- **336 --- Transportation Equip Mfg**
- **337 --- Furniture + Related Prod Mfg**
- **339 --- Miscellaneous Mfg**

Est. 7.9 million workers in 2005 (BLS)

Ten Largest Manufacturing Sub-sectors, 2005



Total Employment Growth and Manufacturing Employment Decline



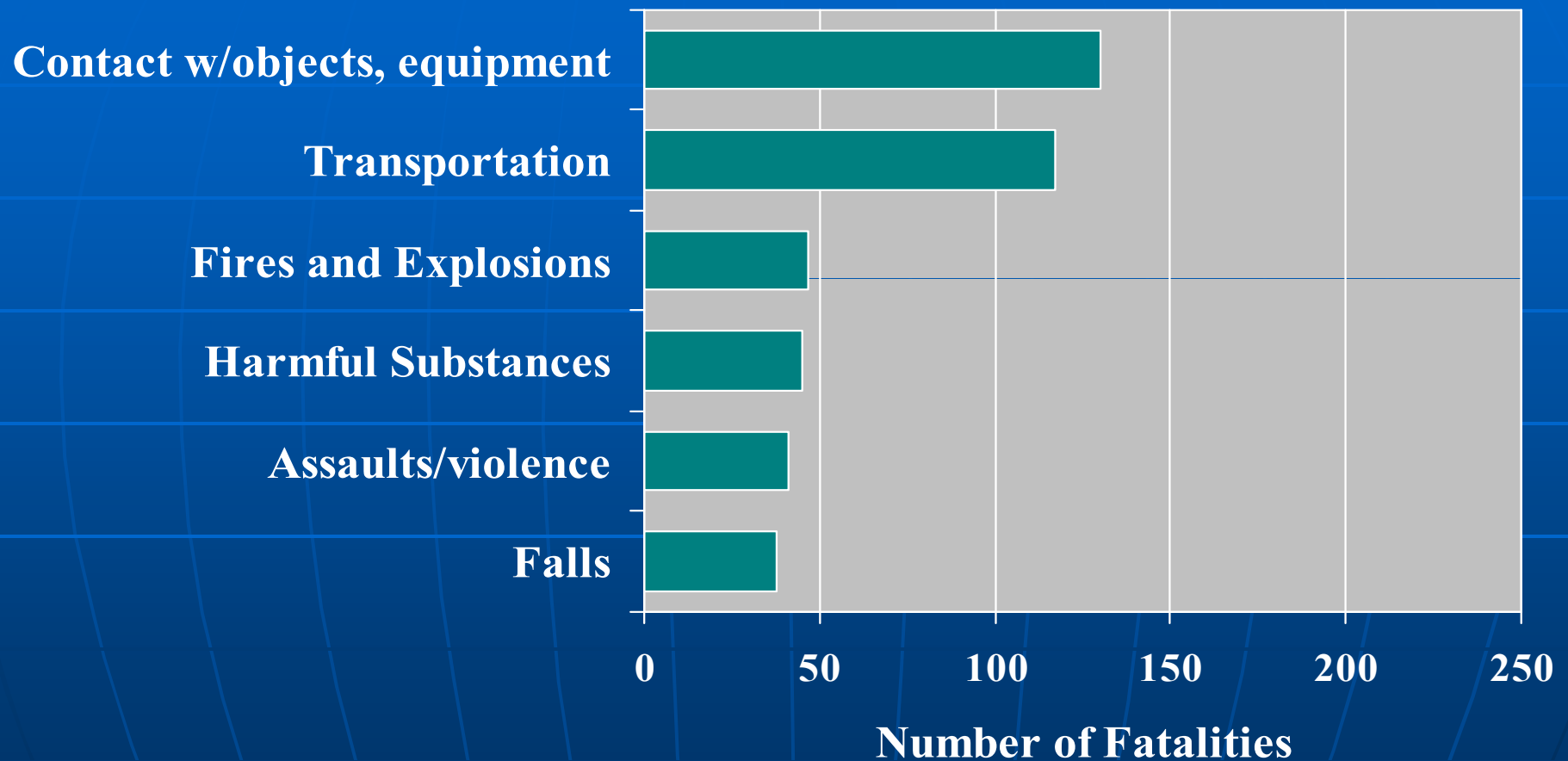
Manufacturing Employment Decline

- Computers & electronics
467,000
- Fabricated metals
293,000
- Machinery 285,000
- Transportation
260,000
- Apparel 37.4%
- Leather and products 34.1%
- Textile mills
29.5%
- Computers and electronics 25.1%

Manufacturing Sector - Fatalities

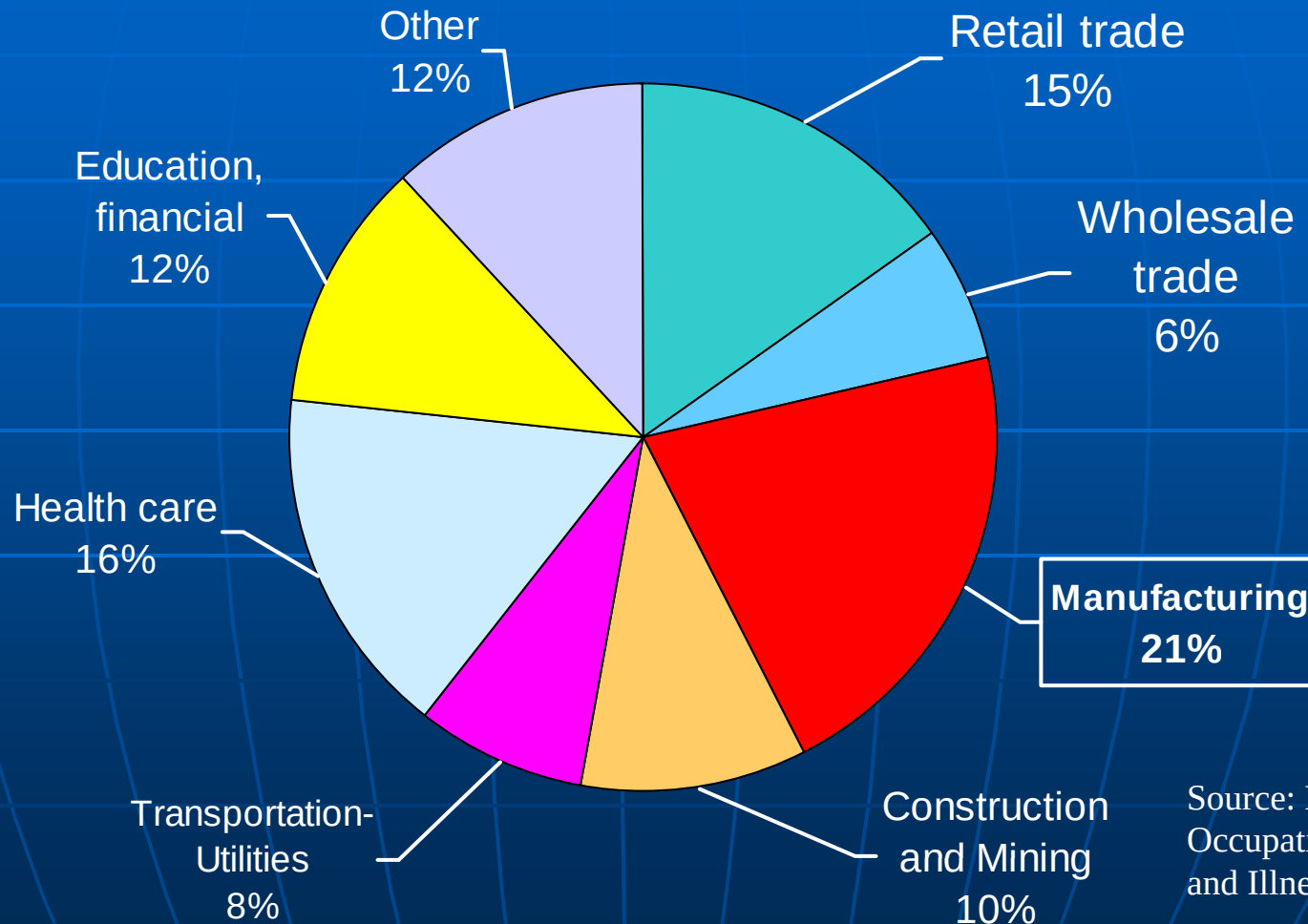
- 2.8 Fatalities/100K FTW, 2004
- 4th COPD as cause of death
- 19% % of COPD attributable to work
- 112 PMR for all cancer
- 172 PMR for silicosis in sector
- 225 PMR for mesothelioma – TEM
- 310 PMR for asbestosis - FMM

Leading causes of work-related deaths in the manufacturing sector, 2004



Source: Census of Fatal Occupational Injuries, Bureau of Labor Statistics

In 2005 Manufacturing comprised 21% of all industry injuries



Source: BLS Survey of Occupational Injury and Illness

Workplace Injuries and Illnesses, Per 100 FTEs

	<u>TOTAL</u>	<u>MANUFACTURING</u>
2004	4.8	6.6
2003	5.0	6.8
2002	5.3	7.0
2001	5.7	7.2
2000	6.1	7.3

Leading causes of nonfatal injuries and illnesses in 2004 for manufacturing

- **Struck by object**
- **Lifting**
- **Caught in/compressed by object**
- **Falls on same level**
- **Repetitive motion**



Source: BLS Survey of Occupational Injury and Illness

Sector Research Council Membership

- **Industry** (Ford, Rohm&Haas, Intel, Nat'l Semiconductor, Johnson&Johnson)
- **Labor**
- **Academics** (Rochester, Washington, Cincinnati)
- **Trade and professional associations** (AMI)
- **Federal and state partners** (WI, MA, OSHA)
- **Insurance** (Liberty Mutual, Mitsui Sumitomo)
- **Scientists and OSH professionals** (RAND)
- **NIOSH**

Manufacturing Sector Council - Activities

- Town Hall meeting March, 2006
- New – no “precedent”
- 1st meeting – January, 2007
- Adding specific disciplines/representatives
- Working on strategic plan
- Developed list of sector top issues

Mission

- The mission of the NIOSH research program for the Manufacturing Sector is to eliminate occupational diseases, injuries, and fatalities among individuals working in manufacturing industries through a focused program of research and prevention.

Manufacturing Sector Top Issues

- Chemical exposures
- Organization of work
- Safety management characteristics
- Worker
- Training
- Small business issues
- International issues
- Vulnerable populations
- Work-life issues

Manufacturing Sector Top Issues

- Respiratory disease issues
- Ergonomics/MSDs
- Nanotechnology and ultrafines
- Surveillance/indicators/performance measures
- Dermal exposures
- Noise-induces hearing loss
- Emerging technology
- Miscellaneous

Surveillance/Indicators/Performance Measurement

- Strengthen existing surveillance and develop new surveillance systems and data sources
- Company-based surveillance system
- Identify and assess gaps in our surveillance data
- Develop a better understanding of what data are needed and why

Surveillance/Indicators/Performance Measurement

- Chemical exposure assessments and appropriate medical surveillance and illness incidence, short and long-term
- Develop national, state, and local surveillance that can be used to track NORA performance measures
 - Private industry
 - Nation

Surveillance/Indicators/Performance Measurement

- Exposure surveillance
- Issues with under-reporting in BLS data
- Incident investigation (properly coding illness or injuries along with details to help target intervention research)

Surveillance/Indicators/Performance Measurement

- Surveillance of occupational illness and determining the costs of occupational illness, especially illness that may occur after an employee retires
 - Attributable risk
 - Commensurate with large estimated number of yearly deaths attributable

Surveillance/Indicators/Performance Measurement

- Improve linkage between surveillance databases through common systems for coding of illness, injuries, industry, and occupation
- Better and swifter communication of summary research results
- Incident investigation and follow-up
- Intervention effectiveness

Surveillance/Indicators/Performance Measurement

- Leading indicator surveillance
- Surveillance systems for chronic diseases
- Comparability of statistical measures over time
- Developing methodology to associate multiple causes with occupational injury and illness incidence reports

Surveillance/Incidence/Performance Measurement

- Develop an intervention effectiveness policy so that safety and health intervention can be evaluated for both health and business effect
- Encourage collaborative surveillance studies using alternative data sources (such as worker compensation insurance databases)

Surveillance/Indicators/Performance Measurement

- Define leading and lagging consensus performance indicators, and achieve their widespread adoption and use across the full range of organizational levels – site to national
 - Occupational health
 - Occupational safety
 - Process safety

Interim Goals

- Improve surveillance of occupational injuries, illnesses, and hazards for the sector at the federal, state, and private level
- Develop interventions to prevent or reduce fatalities and illnesses in the chemical manufacturing industry, the fabricated metal products industry, and the transportation equipment manufacturing industry

Interim Goals

- Develop and diffuse a business case for safety culture changes in the manufacturing sector
- Reduce the incidence of respiratory disease in the manufacturing sector
- Reduce injuries, illnesses, and fatalities in the food manufacturing sector
- Reduce noise-induced hearing loss in the manufacturing sector

Contacts/References

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