



# Prioritizing Industries for Occupational Injury & Illness Prevention and Research

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WA Department of Labor and Industries;  
Safety and Health Assessment and Research for Prevention (SHARP)

- Limited resources for occupational safety and health research and prevention
  - State OSHA program – DOSH/WISHA
  - State workers' compensation system
- SHARP Project Selection Criteria
  - MUST CURE

Funding: WA L&I; CDC/NIOSH 5U01 OH007292 & U60 OH008487





# SHARP MUST CURE CRITERIA

Magnitude – total burden to society and risk (PI)

Urgency – of problem (e.g. changing exposure)

Seriousness – of hazard or injury

Technology Transfer – opportunities for prevention

Cost – direct and indirect

Underreporting – potential (data limitations)

Research Gaps – e.g. heat-related illness

Emerging Hazard – e.g. nanotechnology

- Politics and Funding





# Data Driven Prioritization of Research and Prevention Activities

- Washington State workers' compensation data
  - All claims with  $\geq 3$  days of lost worktime (compensable)
  - FTEs reported quarterly for all employer accounts
  - All costs, time loss days and additional data for SF
- Industry-based research – 1999 - present
  - Healthy Workplaces Project – Food Processing, Millwork, Electrical Contractors
- Compare industries based on claim count (count rank) and risk (claim rate rank)
  - Use **Prevention Index (PI) = (rate rank + count rank)/2**



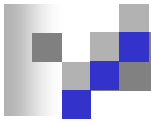


## Washington Compensable Workers' Comp. Claims by NAICS Industry Group Ranked by Prevention Index, 1998 – 2004

| PI Rank* | NAICS Industry Group                                 | Count  | Rate**  | Count Rank | Rate Rank | PI   |
|----------|------------------------------------------------------|--------|---------|------------|-----------|------|
| 1        | 2381 Foundation, Structure, & Bldg. Ext. Contractors | 13,119 | 752.2   | 3.0        | 6.0       | 4.5  |
| 2        | 4841 General Freight Trucking                        | 6,894  | 717.0   | 12.0       | 9.0       | 10.5 |
| 3        | 4921 Couriers                                        | 4,643  | 877.0   | 19.0       | 3.0       | 11.0 |
| 4        | 2361 Residential Building Construction               | 7,483  | 612.3   | 9.0        | 15.0      | 12.0 |
| 5        | 4811 Scheduled Air Transportation                    | 5,088  | 718.5   | 17.0       | 8.0       | 12.5 |
| 9        | 6222 Psychiatric & Substance Abuse Hospitals         | 1,812  | 918.9   | 46.0       | 2.0       | 24.0 |
| 18       | 9211 Exec., Leg., & Other Gen. Gov. Support          | 20,042 | 373.0   | 1.0        | 67.0      | 34.0 |
| 38       | 3364 Aerospace Product & Parts Mfg.                  | 15,102 | 283.7   | 2.0        | 110.0     | 56.0 |
| 57       | 4832 Inland Water Transportation                     | 401    | 1,083.7 | 149.5      | 1.0       | 75.3 |

\* Of the 317 NAICS Industry Groups, 286 were ranked; \*\* Rate per 10,000 FTE





## Focusing Industry Based Prevention Activities:

|                          | <i>High Claim Count</i><br>↓                                                                                                                                                                | <i>Low Claim Count</i><br>↓                                                                                                                                                |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>High Claim Rate</i> → | <b>Large hazardous industry; many workers. Use all available resources including enforcement, consultation, and education. Example: General Freight Trucking</b>                            | <b>Risk concentrated in small hazardous industry with fewer workers. Focused inspection/consultation approach may be appropriate. Example: Inland Water Transportation</b> |
| <i>Low Claim Rate</i> →  | <b>Large industry with many workers but work is less hazardous. Likely no single workplace has high risk. Consider education campaign; inspect with less frequency. Example: Government</b> | <b>On average the least risky industries. Minimal resources needed unless complaints or unique injuries or hazards emerge over time. Example: Software Publishers</b>      |

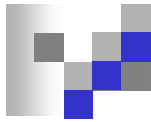




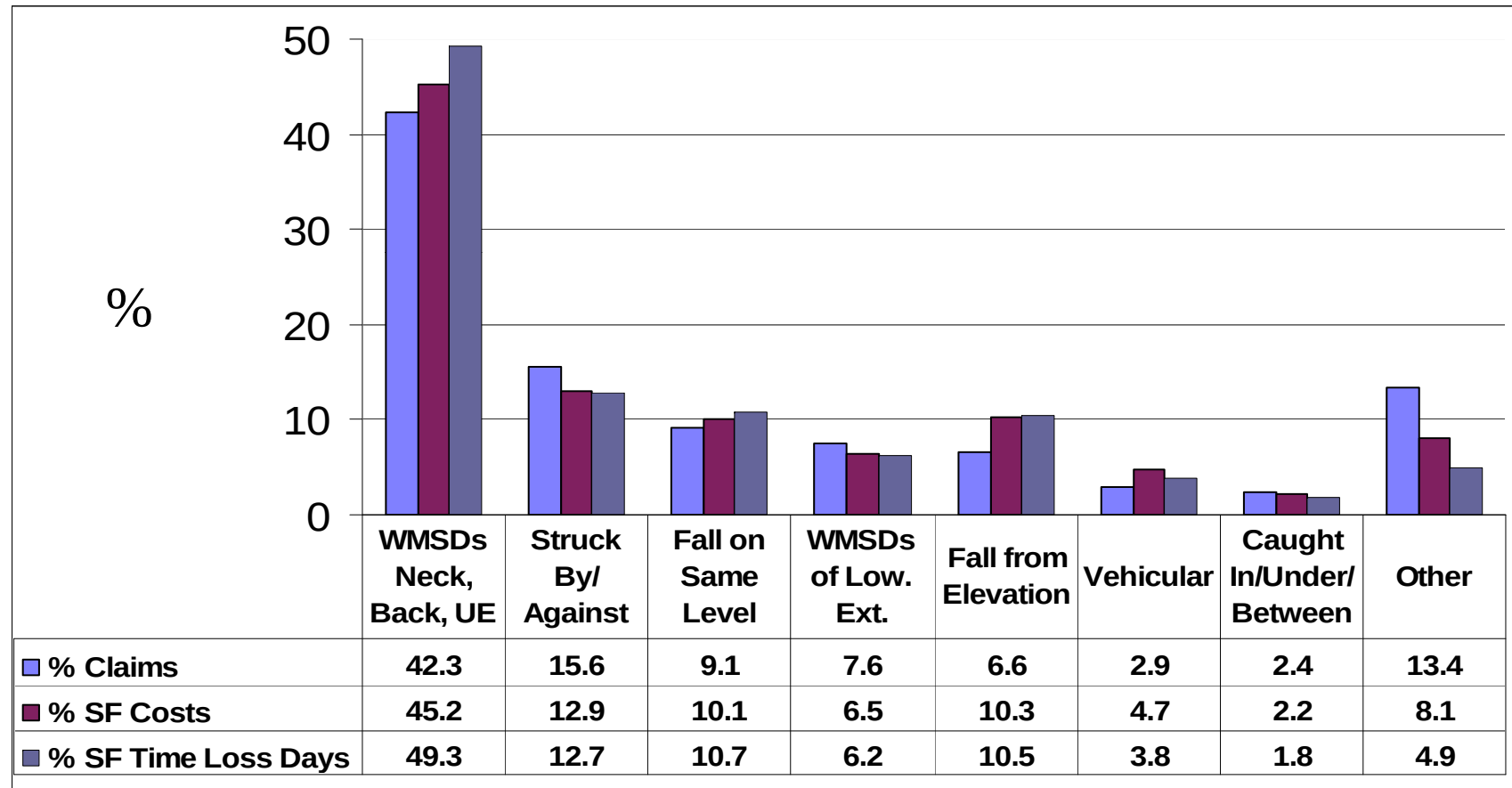
# Data Driven Prioritization of Research and Prevention Activities

- Use PI to prioritize industries for common high cost workers' compensation claims
  - WMSDs Upper extremity, back, neck
  - WMSDs Lower extremity
  - Fall from elevation
  - Fall on same level
  - Struck by/against
  - Caught In/Under/Between
  - Vehicular Claims





# Washington State Compensable Claims, SF Compensable Claim Costs and SF Time Loss Days by Injury Type Groups, 1998-2004





# Considerations / Discussion

- Provide state OSHA plan PI information to allocate state prevention resources – enforcement, consultation, education and research
- Adaptable to NAICS Hierarchy (2-6 digit)
- Prioritize based on factors other than injury burden and injury risk? Illnesses? Fatalities?
- Use other data sources?
- Can the prevention index be improved?
  - Severity rate – time loss days/10,000 FTE



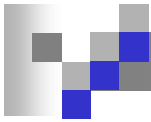




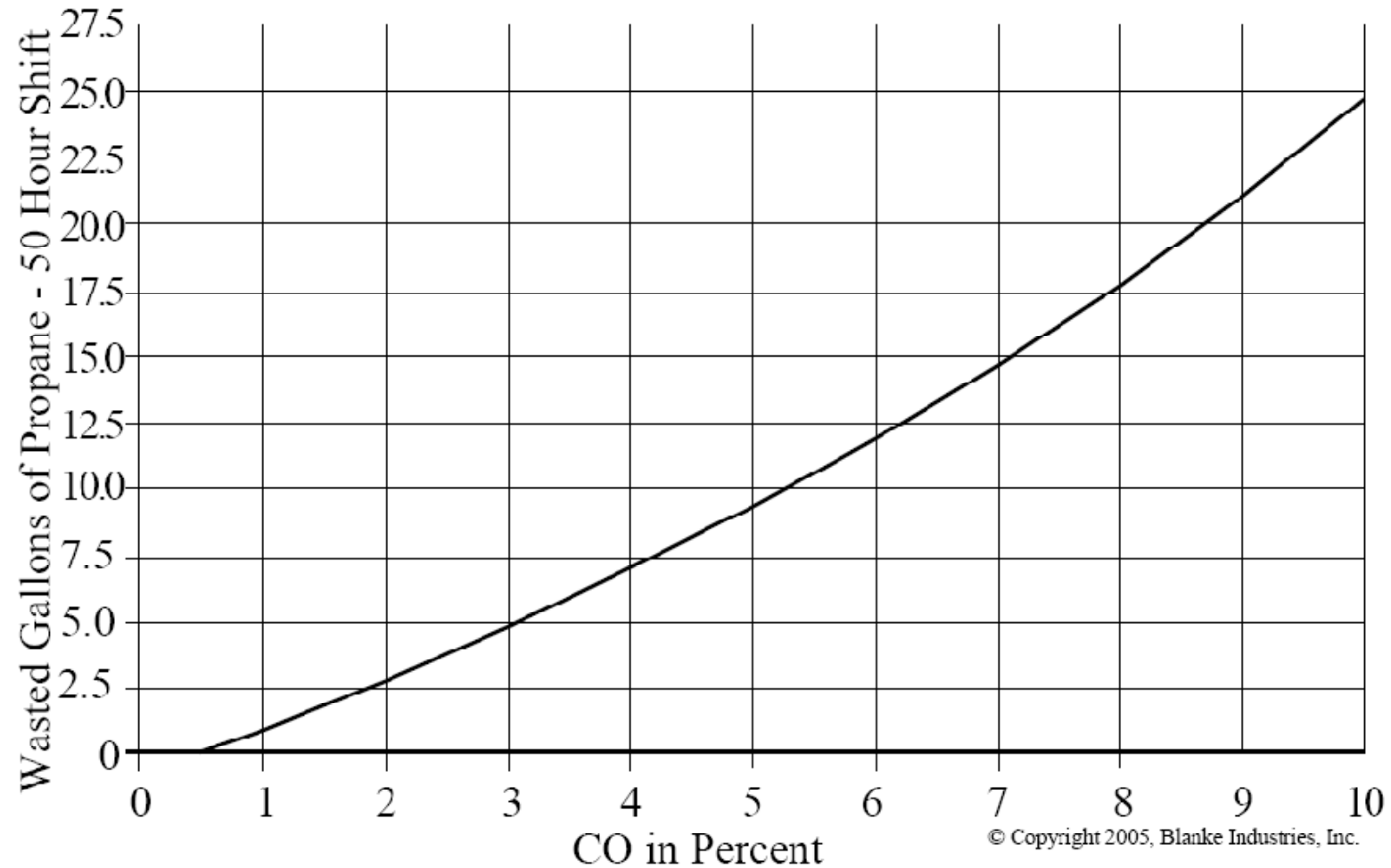
# Carbon Monoxide Poisoning in Forklifts- Prevention Materials

Carolyn Whitaker, MS, CIH

- Recognized problem in many industries - wholesale trade, manufacturing and agriculture (Lofgren, Appl Occ Env Hyg, 2002)
- Propane/Gas Powered Forklifts ~ 42% incidents
  - ‘Clusters’ – dramatic, mass events
    - ~85 claims in 1997 Brewster – WA Apple Packing
  - Educational Materials
    - Compare electric powered to propane powered regarding cost, purchase, maintenance, and other factors
    - Fuel savings for well-tuned forklift pays for tuning and eliminates risk
    - Worker awareness of CO risk – English and Spanish



Wasted Propane in Gallons per Week per Shift versus Percent CO





# Carbon Monoxide Poisoning from Forklifts-

## Linking Claims to Prevention – Employer Incentives

