

National Academies' Review of the

NIOSH Traumatic Injuries (TI) Research Program



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WORKPLACE SAFETY AND HEALTH



NIOSH Traumatic Injuries (TI) Research Program

- ◆ Overview of TI Program
- ◆ Relevance of TI Program
- ◆ Impact of TI Program

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NIOSH Traumatic Injuries (TI) Research Program

◆ Overview of TI Program

Historical Development

- Early NIOSH resources focused on occupational health issues
- Early TI research piecemeal and scattered
- Problem areas and priorities not data-driven

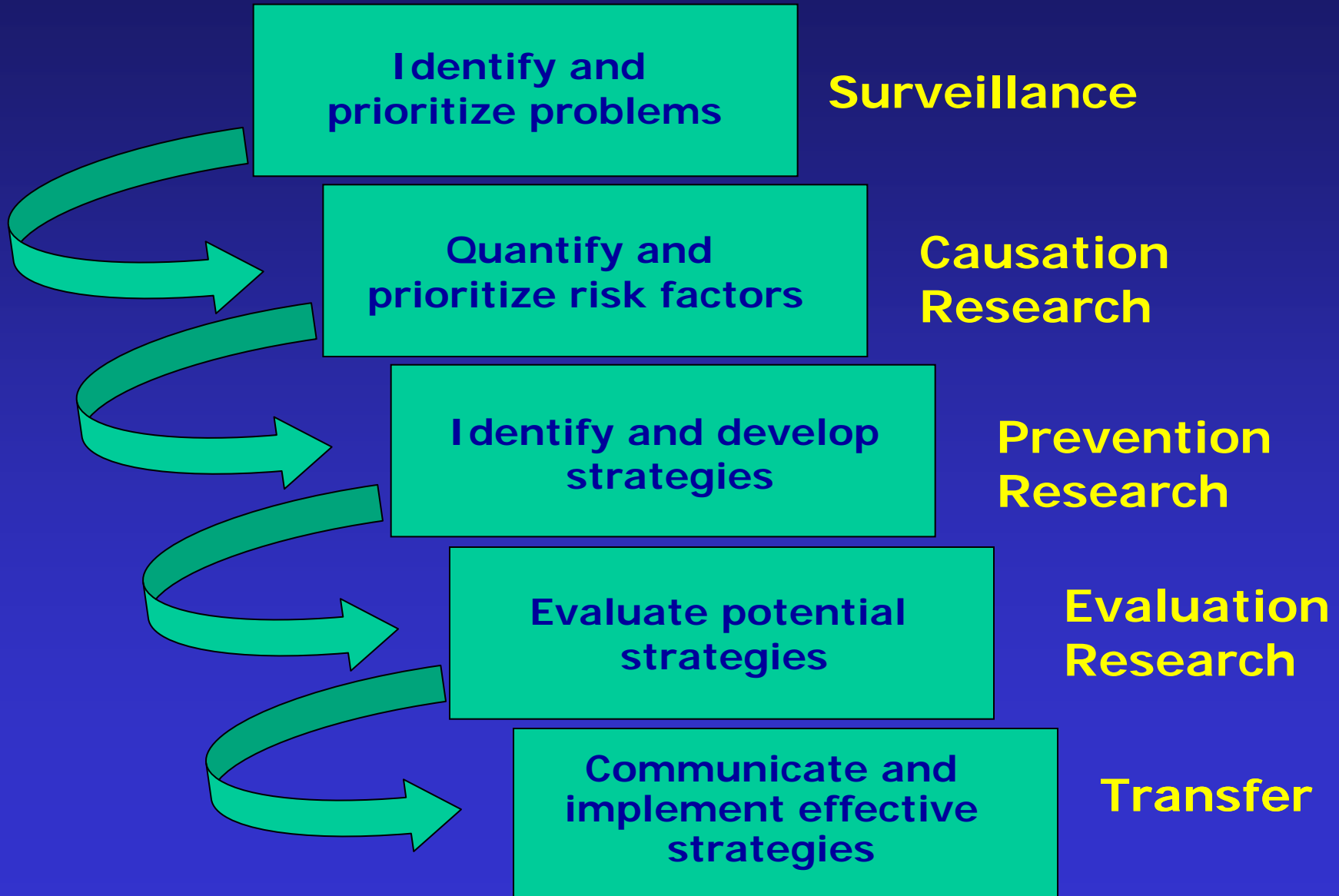
NIOSH Traumatic Injuries (TI) Research Program

◆ Overview of TI Program

Seeking Relevance and Impact

- Division of Safety Research (DSR) established in 1977
- Systematic approach sought for problem identification/prioritization
- Public health approach implemented

The Public Health Approach to Injury Prevention



NIOSH Traumatic Injuries (TI) Research Program

◆ Overview of TI Program

Filling the Gaps

- TI Surveillance
- TI Investigations/Causation Research
- TI Prevention Research
- Targeted Dissemination/Tech Transfer
- Partnerships, Collaboration

NIOSH Traumatic Injuries (TI) Research Program

◆ Overview of TI Program

Current Program

- Scope of TI Program
- Organizational Structure
- Staff
- Facilities
- Budget

NIOSH Traumatic Injuries (TI) Research Program

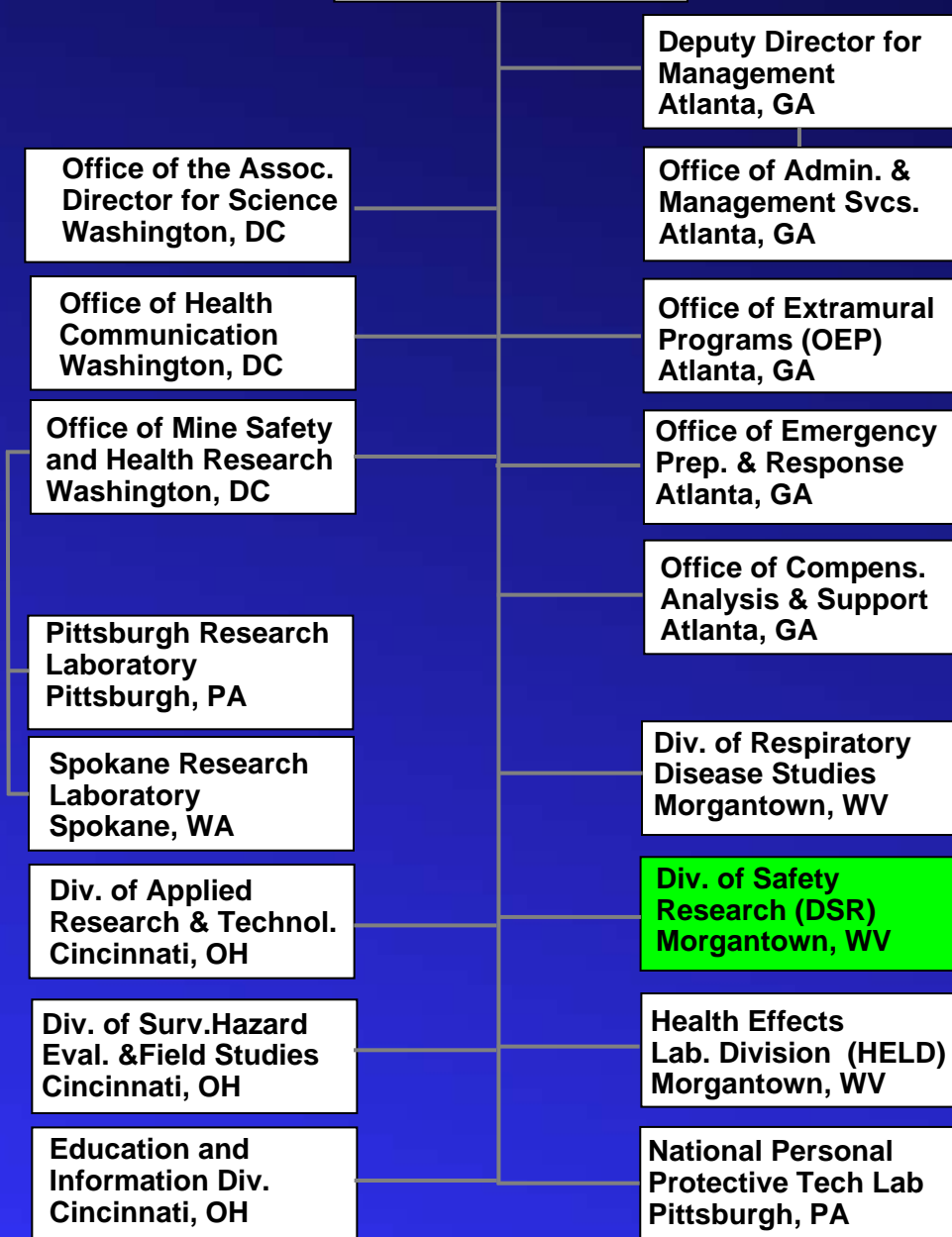
◆ Overview of TI Program

Scope of TI Program

- Excludes psychological trauma
- Excludes chronic MSD
- Excludes mining TI research

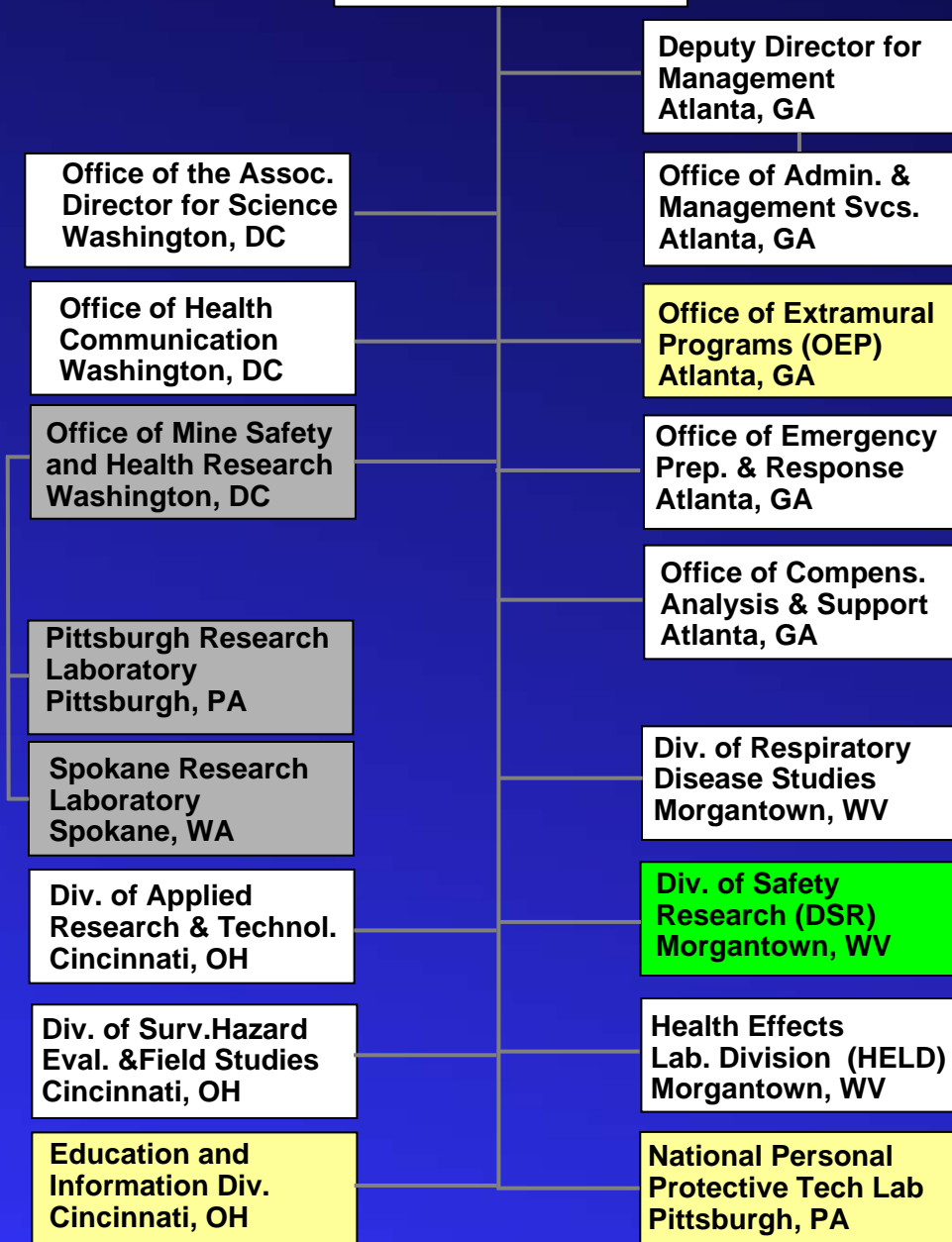
NIOSH

Office of the Director
Washington, DC



NIOSH

Office of the Director
Washington, DC



Matrix Management Components of NIOSH Program Portfolio

NORA Sector Programs	NIOSH Cross-Sector Programs	NIOSH Coordinated Emphasis Areas
Agriculture, Forestry and Fishing	Authoritative Recommendations	Economics
Construction	Cancer, Repro and Cardiovascular	Exposure Assessment
Healthcare and Social Assistance	Communications and Information Dissemination	Engineering Controls
Manufacturing	Emergency Preparedness/Response	WorkLife Initiative
Mining	Global Collaborations	Occupational Health Disparities
Services	Health Hazard Evaluation (HHE)	Small Business Assistance and Outreach
Wholesale and Retail Trade	Hearing Loss Prevention	Surveillance
Transportation, Warehousing and Utilities	Immune and Dermal	
	Musculoskeletal Disorders	
	Personal Protective Technology	
	Radiation Dose Reconstruction	
	Respiratory Diseases	
	Training Grants	
	Traumatic Injury	
	Work Organization and Stress-Related Disorders	

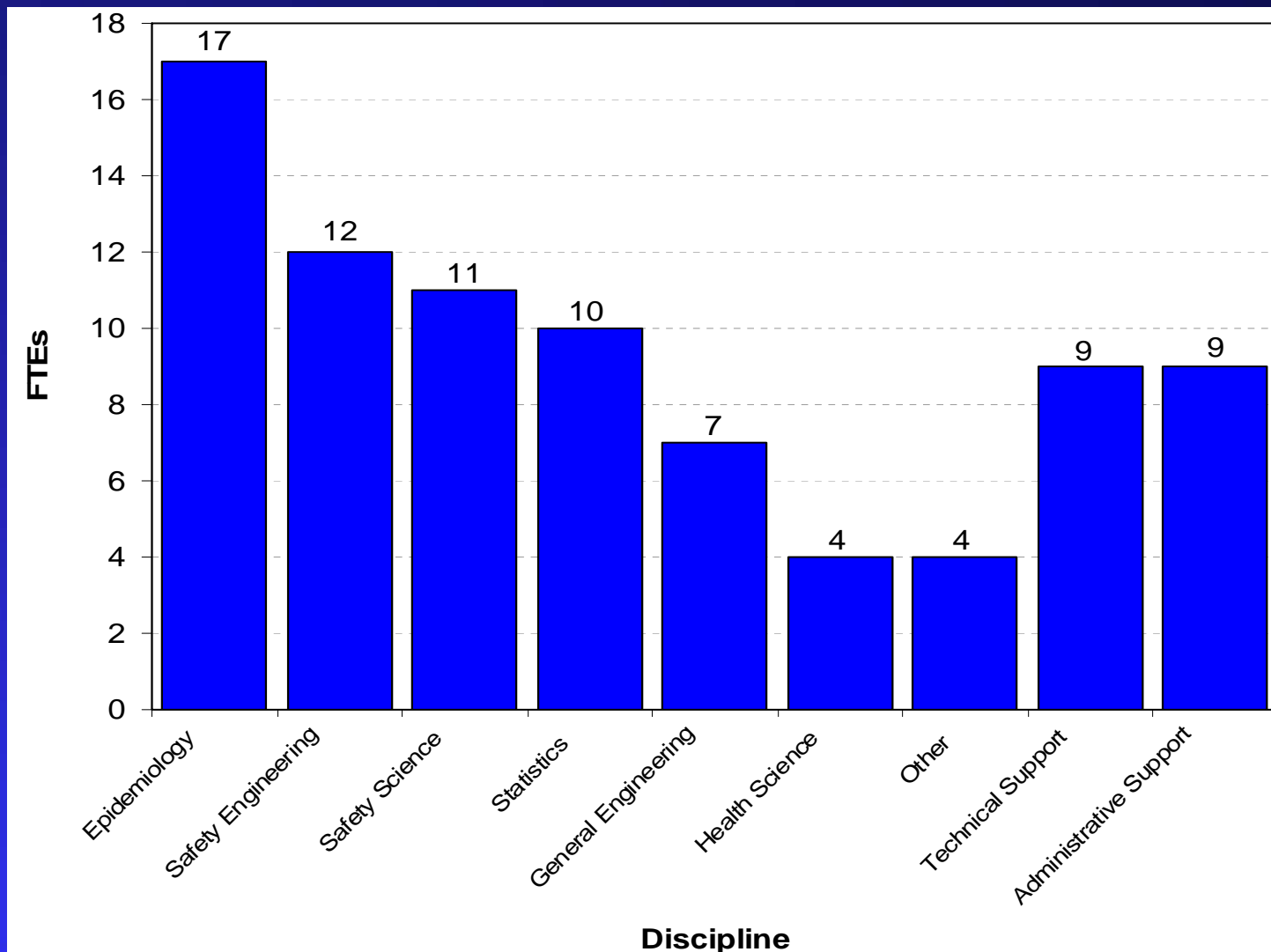


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TI Research and Support Staff by Discipline

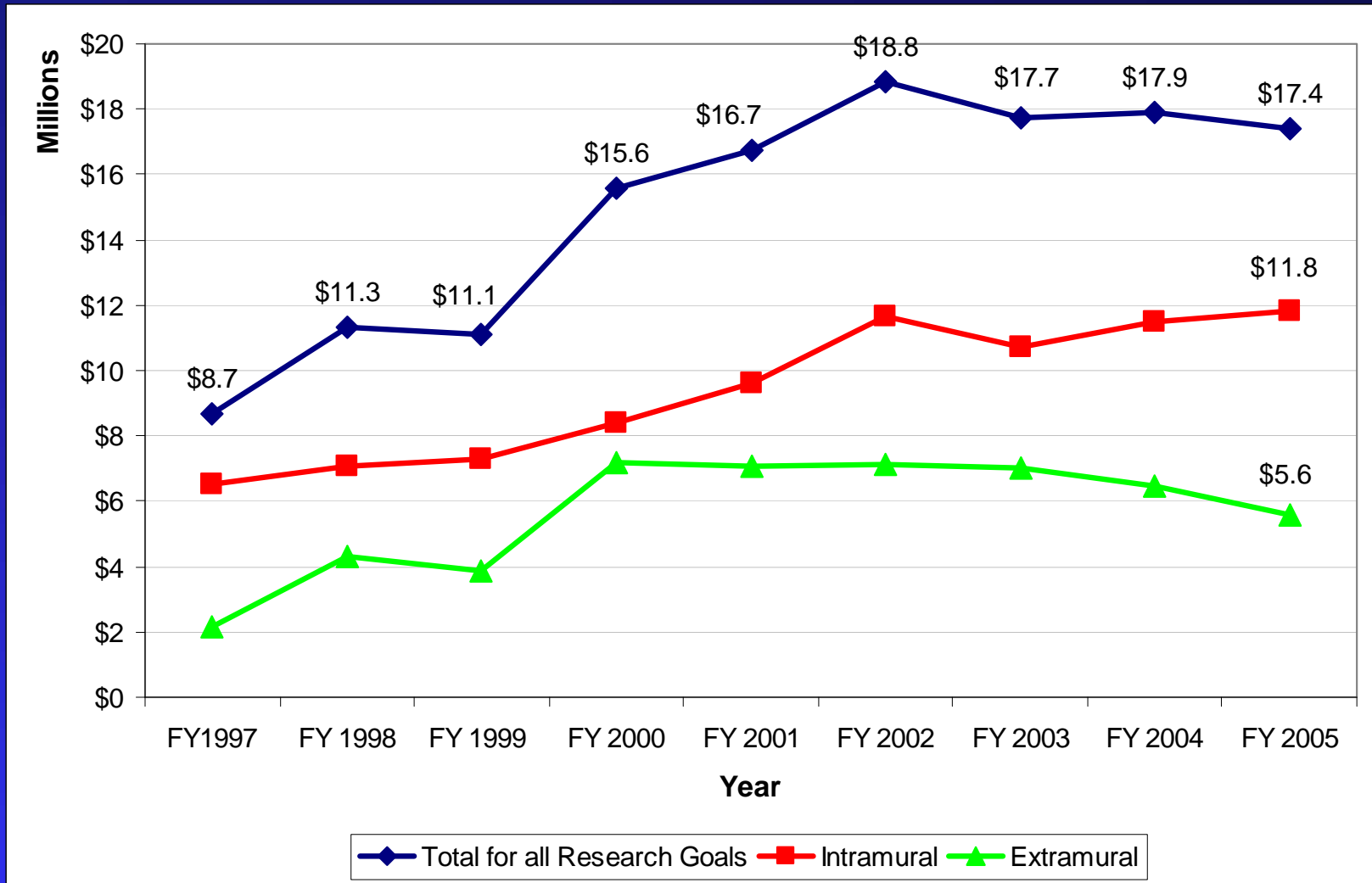




TI Research Program Laboratory Facilities



Funding for 8 TI Research Goal Areas: Total, Intramural, and Extramural Funds, 1997-2005



NIOSH Traumatic Injuries (TI) Research Program

◆ Relevance of TI Program

- Planning Process
- External Inputs/Partnerships
- Transfer Activities
- Emerging Issues

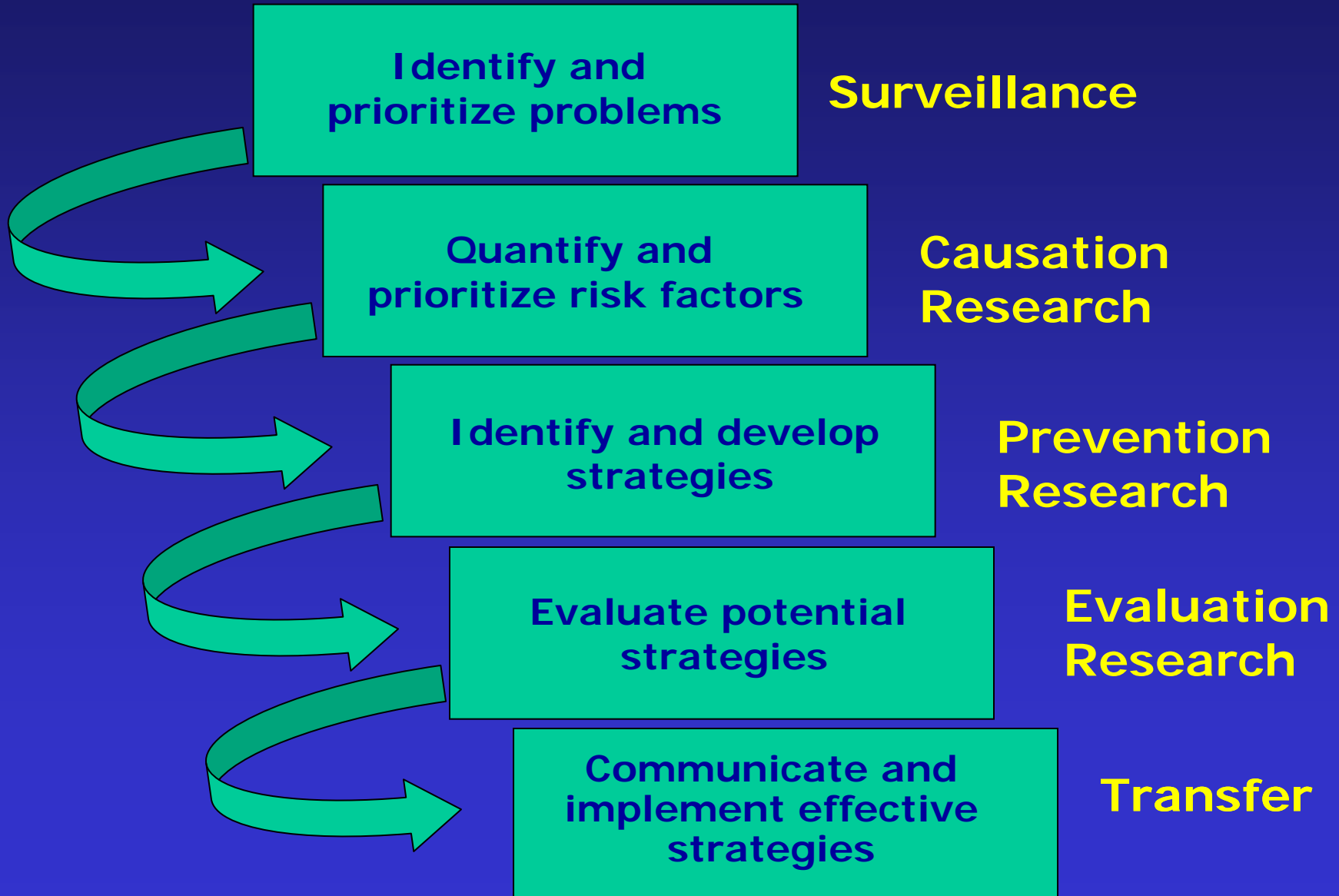
NIOSH Traumatic Injuries (TI) Research Program

◆ Relevance of TI Program

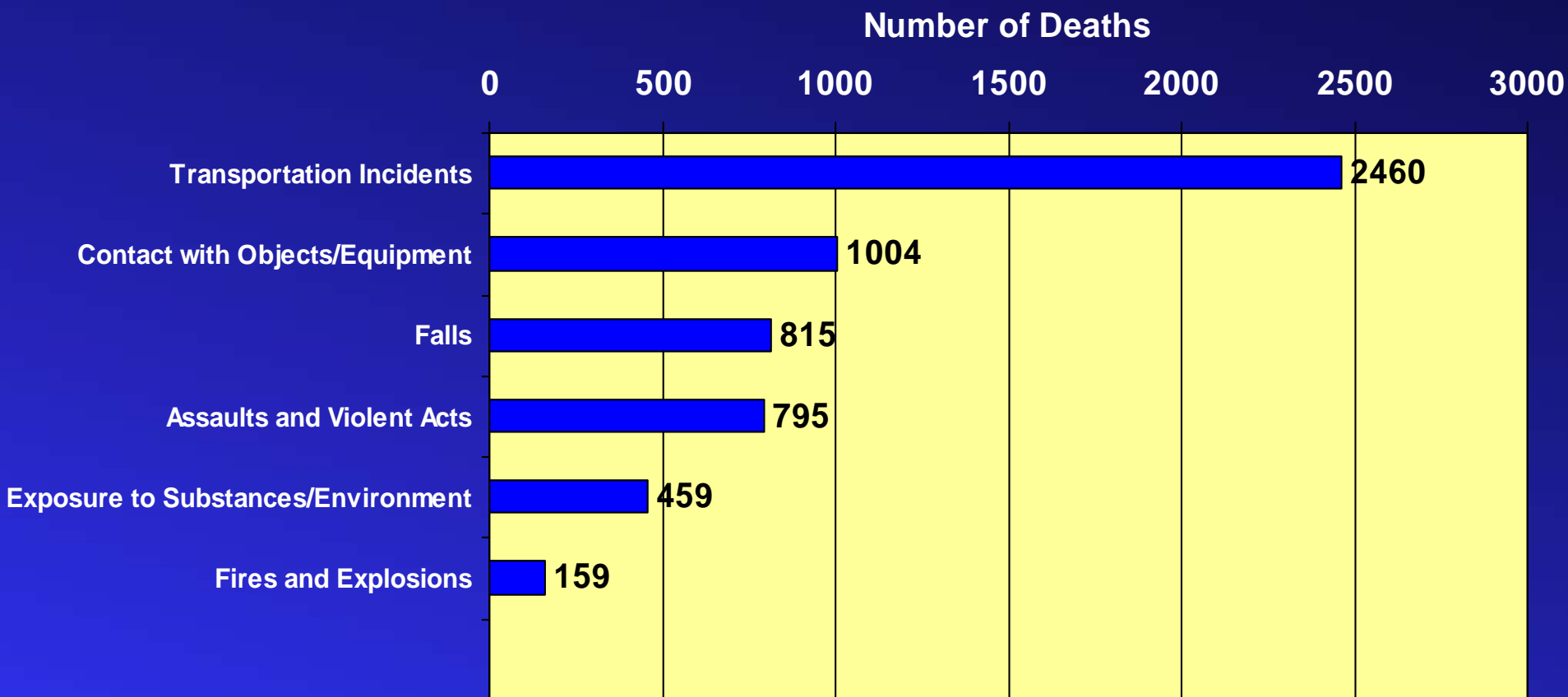
Planning Process: Program Drivers

- Public Health Model
- Data
- *TI Research Needs and Priorities* pub.
- Focus on r2p and Impact

The Public Health Approach to Injury Prevention



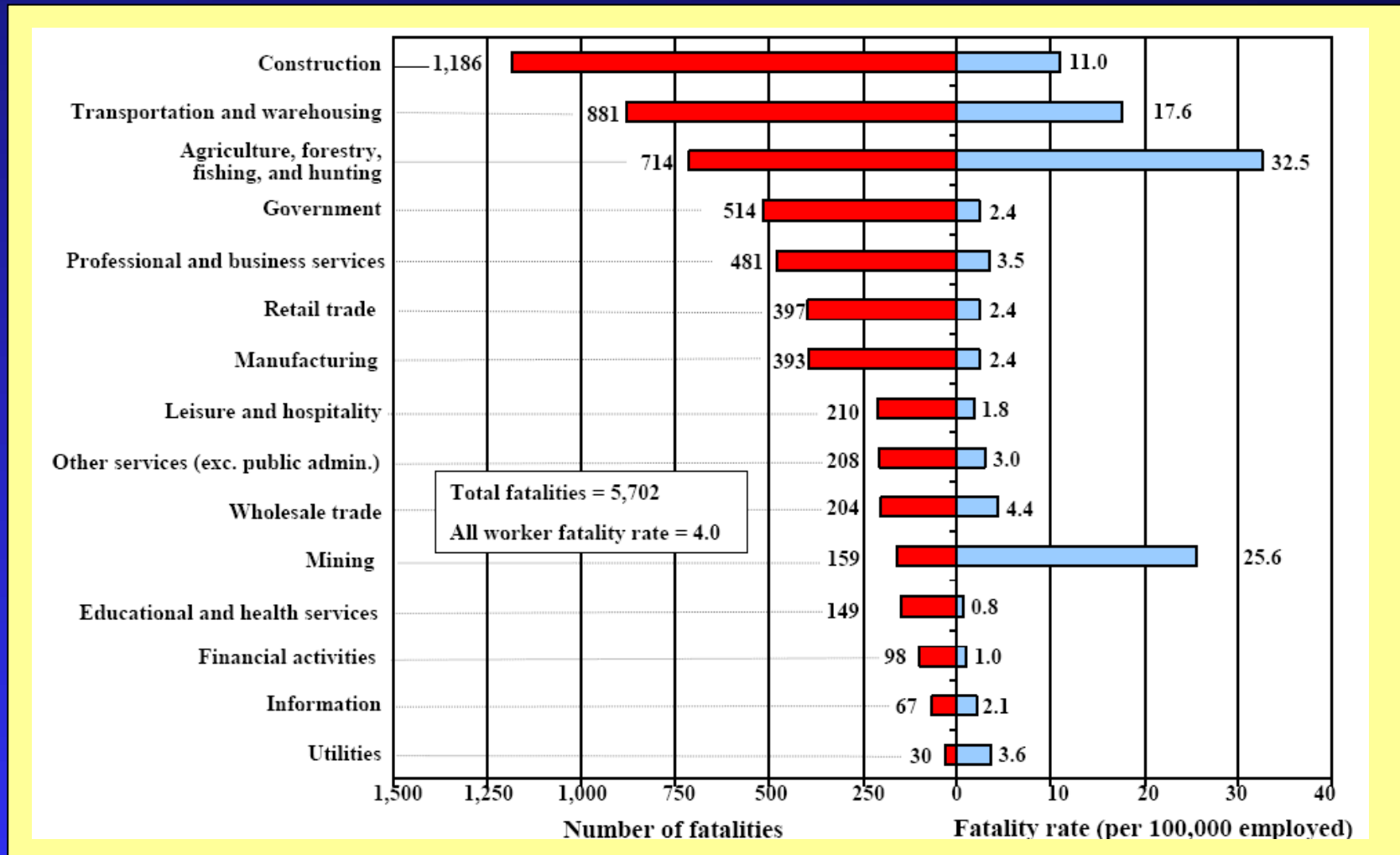
Number of Fatal Work Injuries by Type of Event/Exposure, United States, 2004



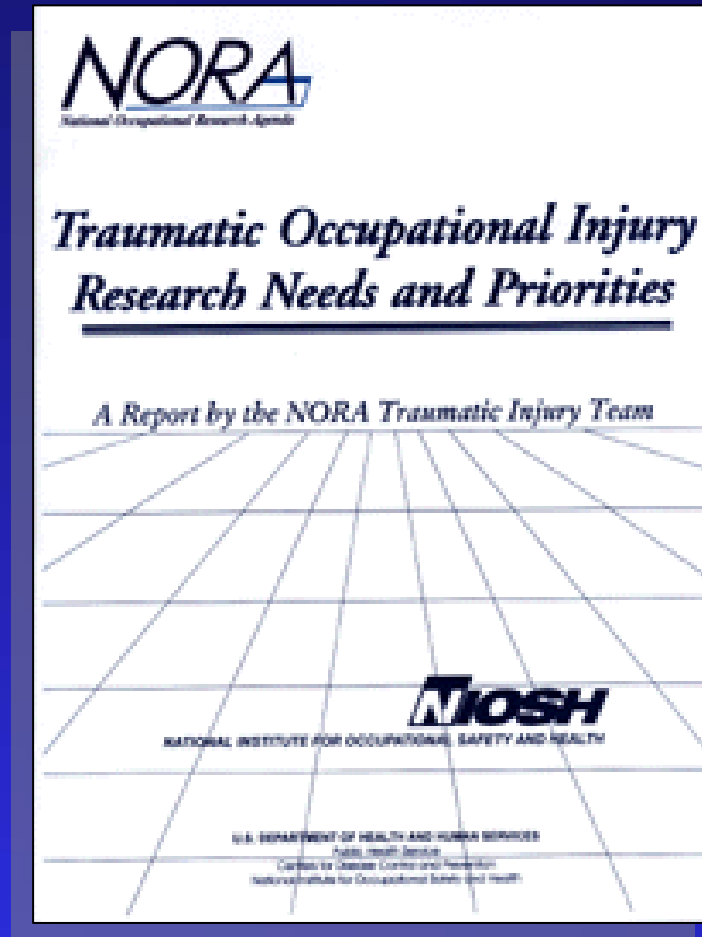
NOTE: Data from 2001 exclude fatalities resulting from the September 11 terrorist attacks.

SOURCE: US Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 2005.

Numbers and Rates of Fatal Work Injuries by Industry, United States, 2005



The NORA-TI Team Publication (1998)



NIOSH Traumatic Injuries (TI) Research Program

◆ Relevance of TI Program

- Planning Process
- **External Inputs/Partnerships**
- Transfer Activities
- Emerging Issues

NIOSH Traumatic Injuries (TI) Research Program

◆ Relevance of TI Program

External Factors

- Congressional Directives





Congressional Appropriations



Workplace Violence



Child Agricultural Injury



Fire Fighter Safety



Alaska 's High-Risk Industries



NIOSH Traumatic Injuries (TI) Research Program

◆ Relevance of TI Program

External Inputs/Partnerships

- Congressional Appropriations
- Stakeholder Input





Stakeholder Meetings for Input



Truck Driver Anthropometry



Tractor Safety



Work Zone Safety



NIOSH Traumatic Injuries (TI) Research Program

◆ Relevance of TI Program

- Planning Process
- External Inputs/Partnerships
- **Transfer Activities**
- Emerging Issues

NIOSH Traumatic Injuries (TI) Research Program

◆ Relevance of TI Program

Transfer Activities: r2p Strategies

- Identify at least one recipient of findings
- Involve recipients from the conceptual phase of research onward
- Recipients carry out the next step in moving research toward workplace implementation



NIOSH Traumatic Injuries (TI) Research Program

◆ Relevance of TI Program

Transfer Activities: Some Recipients

- Professional trainers/communicators
- Regulators/standards setters
- Industry stakeholders
- Manufacturers
- Employers



NIOSH Traumatic Injuries (TI) Research Program

◆ Relevance of TI Program

- Planning Process
- External Inputs/Partnerships
- Transfer Activities
- **Emerging Issues**

NIOSH Traumatic Injuries (TI) Research Program

◆ Relevance of TI Program

Identifying and Addressing Emerging Issues

- **Surveillance data**
- **Planning process**
- **Connectivity with stakeholders**
- **Projects in place to address**
- **Adaptable investigation program**

NIOSH Traumatic Injuries (TI) Research Program

◆ Relevance of TI Program

- Planning Process
- External Inputs/Partnerships
- Transfer Activities
- Emerging Issues

NIOSH Traumatic Injuries (TI) Research Program

◆ Relevance of TI Program

TI Research Goals

1. Reduce injuries and fatalities due to **motor-vehicles**
2. Reduce injuries and fatalities due to **falls from elevations**
3. Reduce injuries and fatalities due to **workplace violence**
4. Reduce injuries and fatalities due to **machines**

NIOSH Traumatic Injuries (TI) Research Program

◆ Relevance of TI Program

TI Research Goals

5. Reduce **acute back injury**
6. Reduce injuries and fatalities among **workers in Alaska's high-risk industries**
7. Reduce injuries and fatalities to **emergency responders**
8. Reduce injuries and fatalities to **working youth**

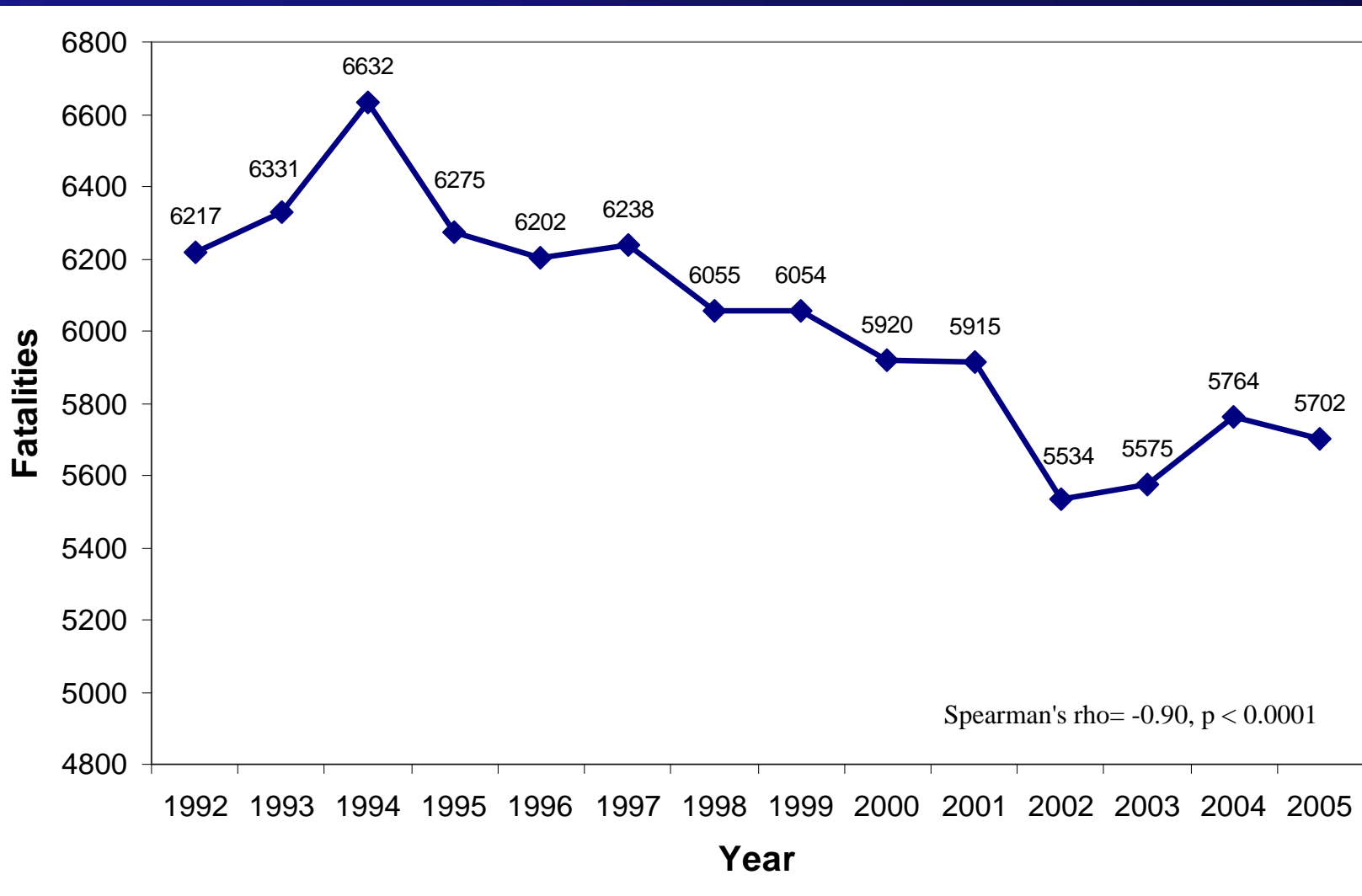
NIOSH Traumatic Injuries (TI) Research Program

◆ Impact of TI Program

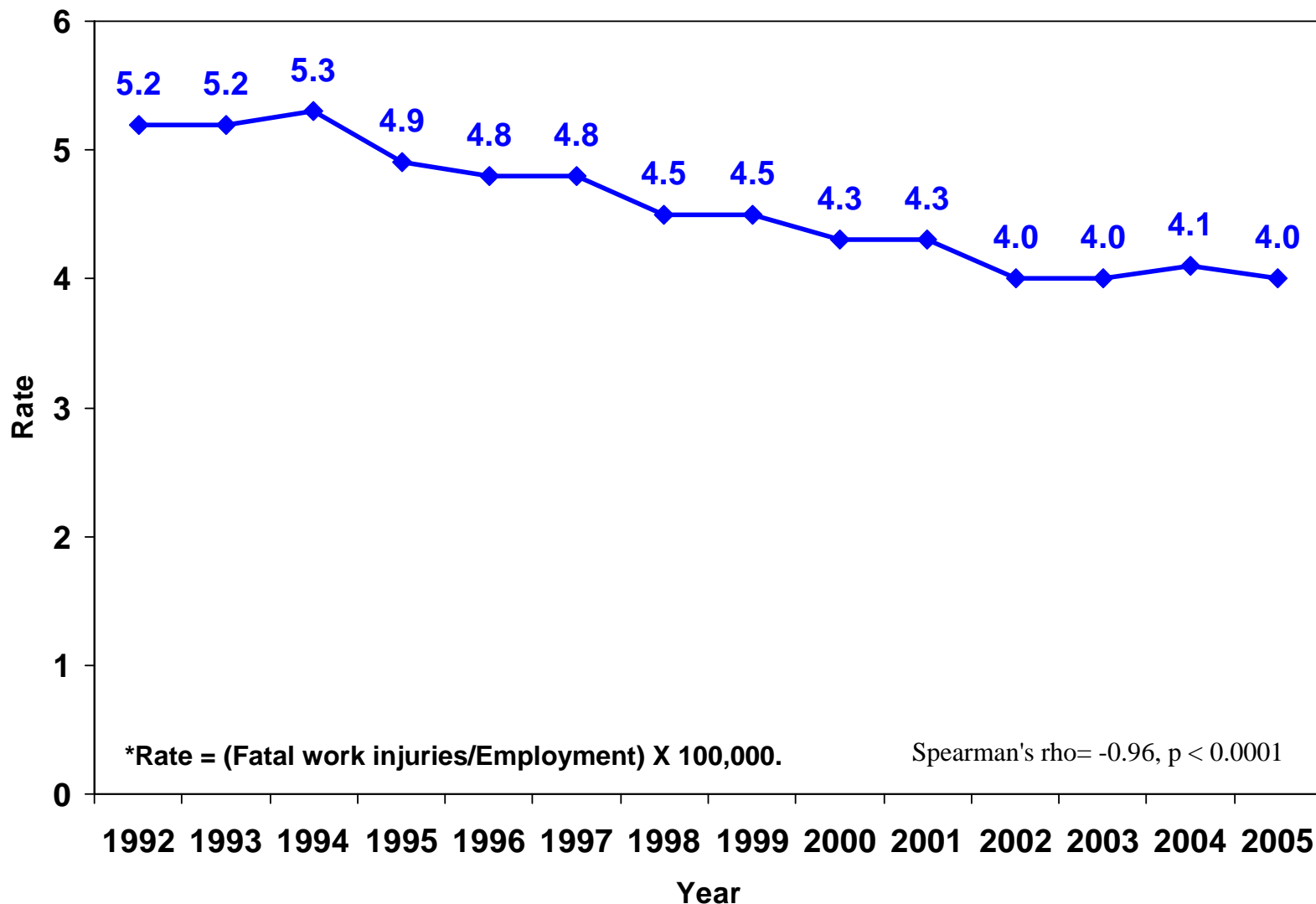
End Outcomes

- Overall reductions in numbers/rates of fatal occupational TI

Number of Fatal Work Injuries, United States, 1992-2005



Rate* of Fatal Work Injuries, United States, 1992-2005



NOTE: Data from 2001 exclude fatalities resulting from the September 11 terrorist attacks.

SOURCE: US Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries.

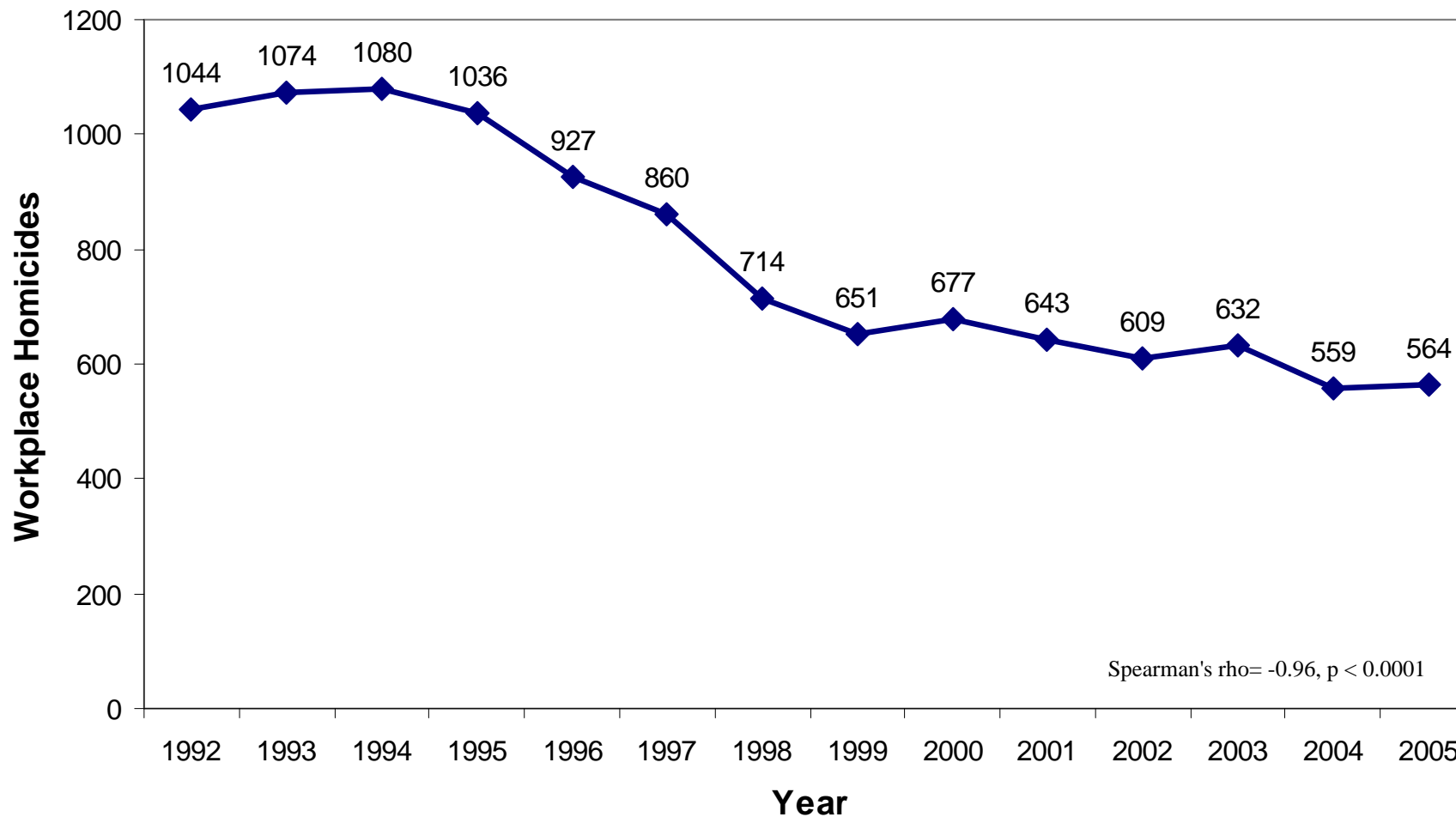
NIOSH Traumatic Injuries (TI) Research Program

◆ Impact of TI Program

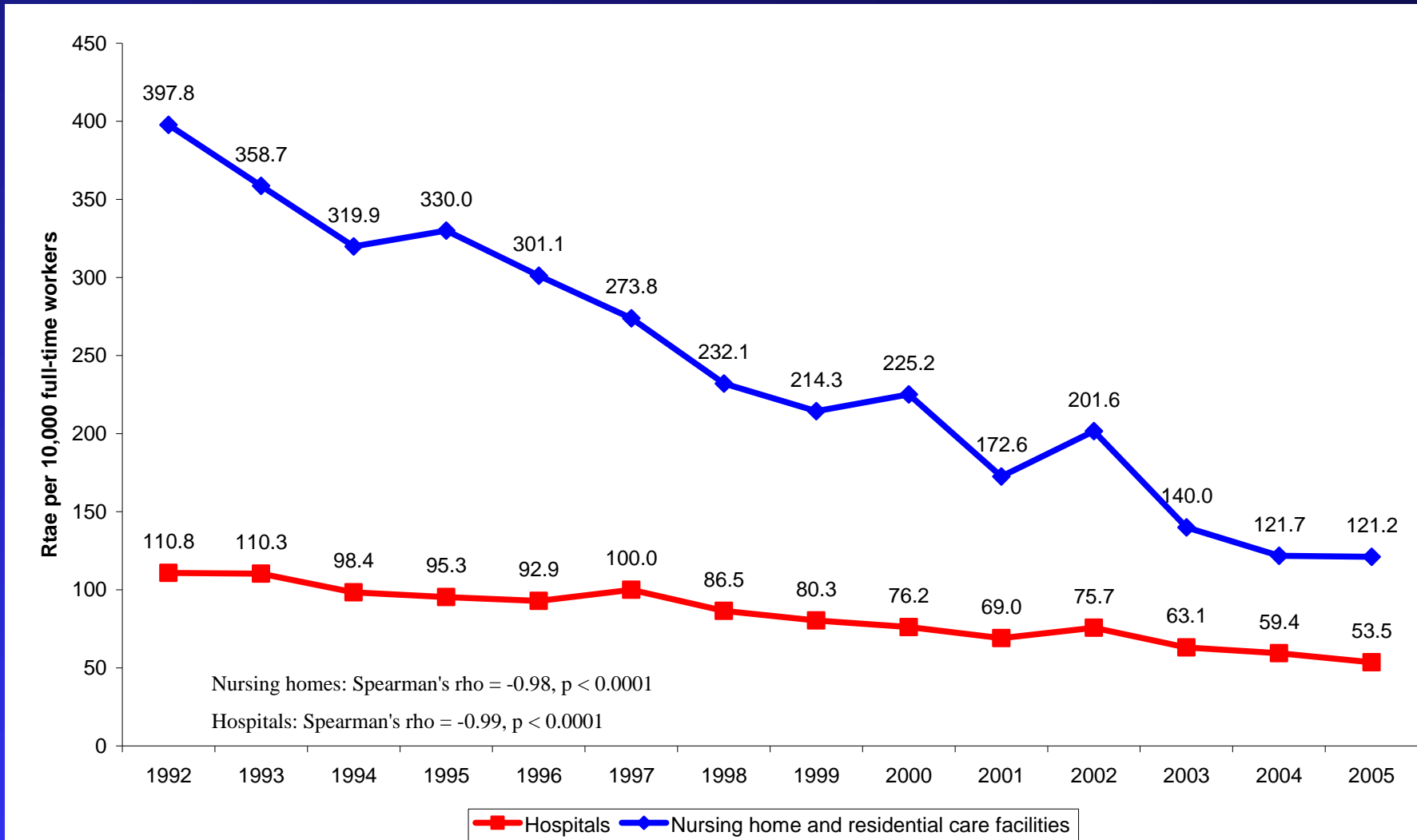
End Outcomes

- Overall reductions in numbers/rates
- Specific reductions in research goal areas:
 - ✓ Homicides
 - ✓ Back Injury in Nursing Homes
 - ✓ Alaska
 - ✓ Youth

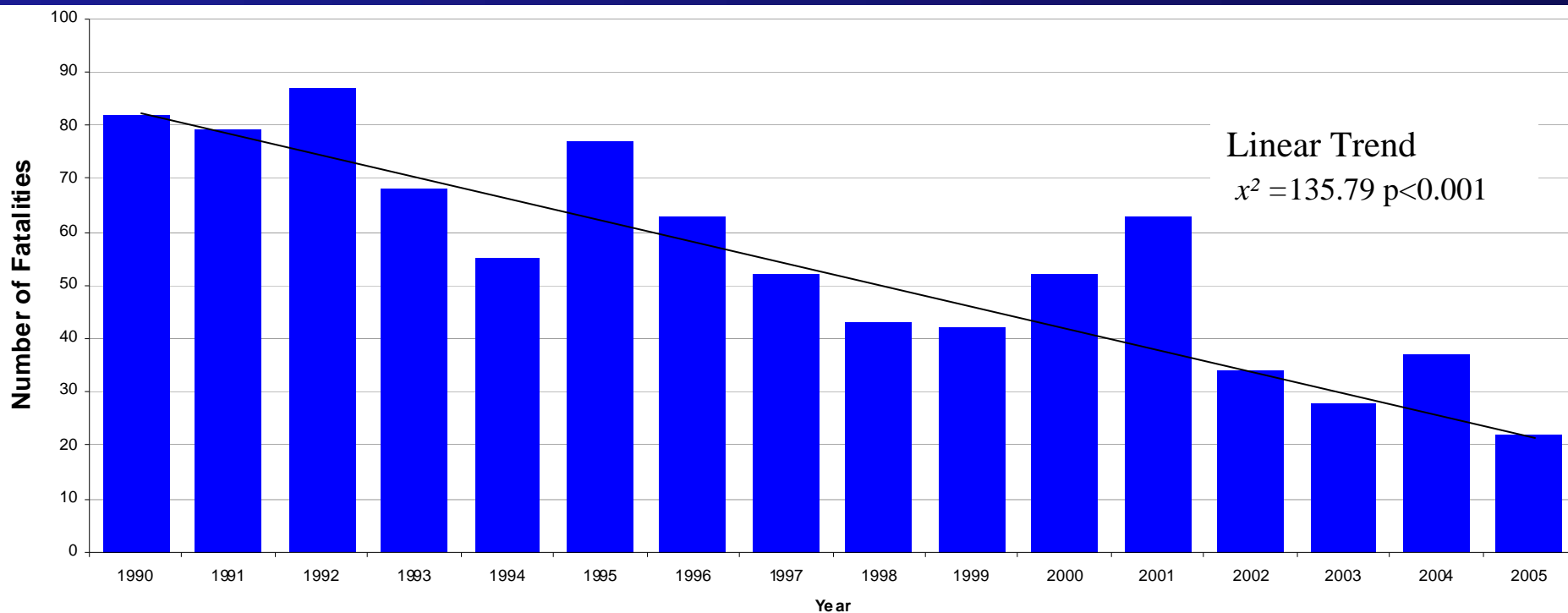
Number of Occupational Homicides, United States, 1992-2005



Rates of Nonfatal Injuries and illnesses Involving Days Away from Work in Hospitals and Nursing Homes, Health Care Patients as Source, 1992-2005

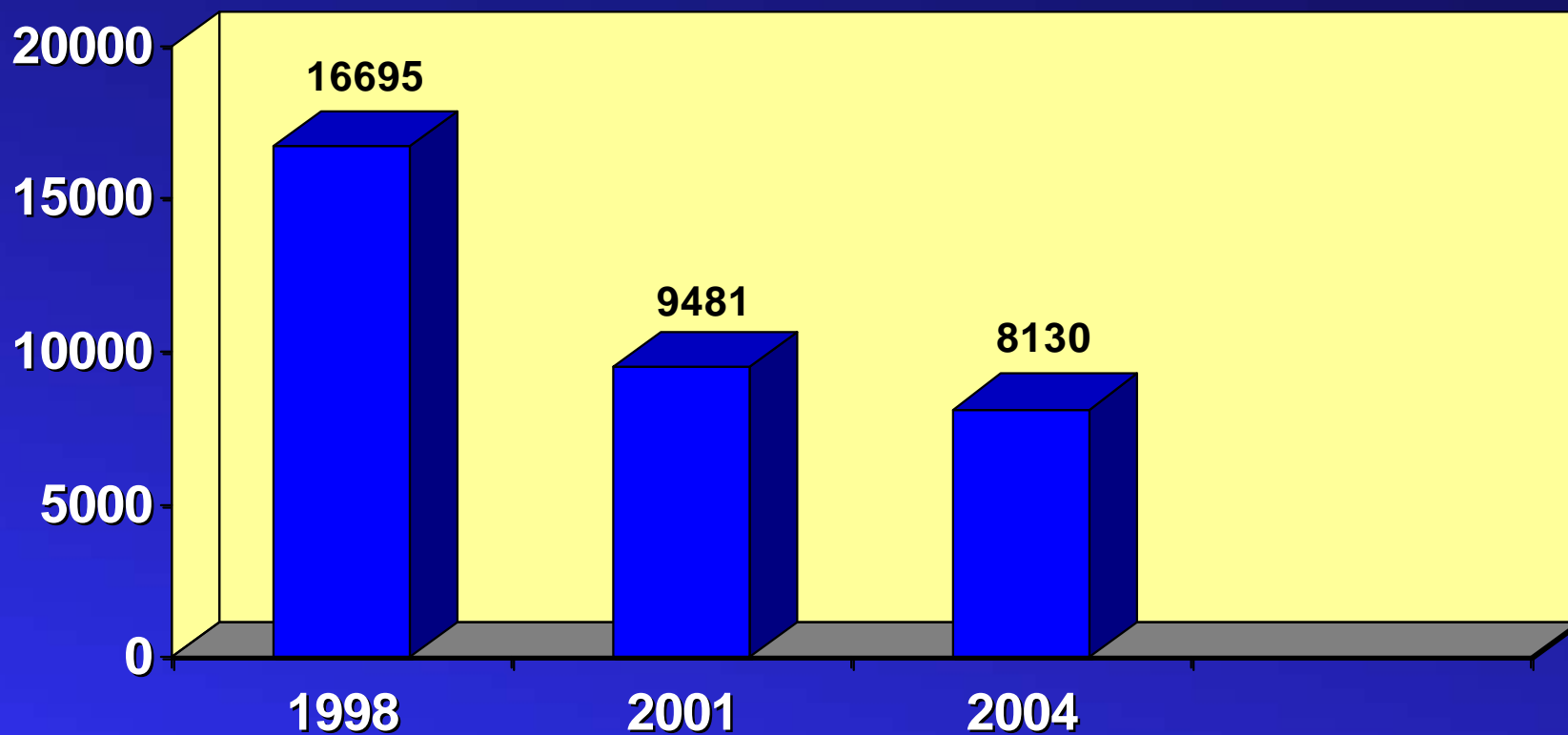


Number of Fatal Work Injuries, Alaska, 1990-2005



SOURCE: Alaska Occupational Injury Surveillance System (AOISS), NIOSH.

Reduction in Work-related Nonfatal Injuries to Youth on U.S. Farms, 1998-2004*



SOURCE: Childhood Agricultural Injury Survey (CAIS)
Farm Operator Survey

NIOSH Traumatic Injuries (TI) Research Program

◆ Impact of TI Program

Intermediate Outcomes:

- Regulations, standards, compliance
- New products, technology
- Training materials
- Stimulation of research

NIOSH Traumatic Injuries (TI) Research Program

◆ Impact of TI Program

Regulations, Standards

- Revised U.S. child labor laws
- New State safe patient-lifting laws
- Telecommunication Tower construction/maintenance guidelines
- Revised consensus standard for Balers
- Revised NFPA standard for PASS devices
- New standard for safe practices for motor-vehicle operation

NIOSH Traumatic Injuries (TI) Research Program

◆ Impact of TI Program

Inspection/Compliance Activities

- USCG Dockside Pre-season Boarding Program (Alaska crab fishing)
- AKDOL and FAA inspection of helicopter logging operations

NIOSH Traumatic Injuries (TI) Research Program

◆ Impact of TI Program

New protective technology products

- Ambulances (patient compartments)
- Fall-arrest harnesses
- AutoROPS (tractors)
- JamAlert (balers)
- “E-stop” for winches on fishing vessels

NIOSH Traumatic Injuries (TI) Research Program

◆ Impact of TI Program

Training materials

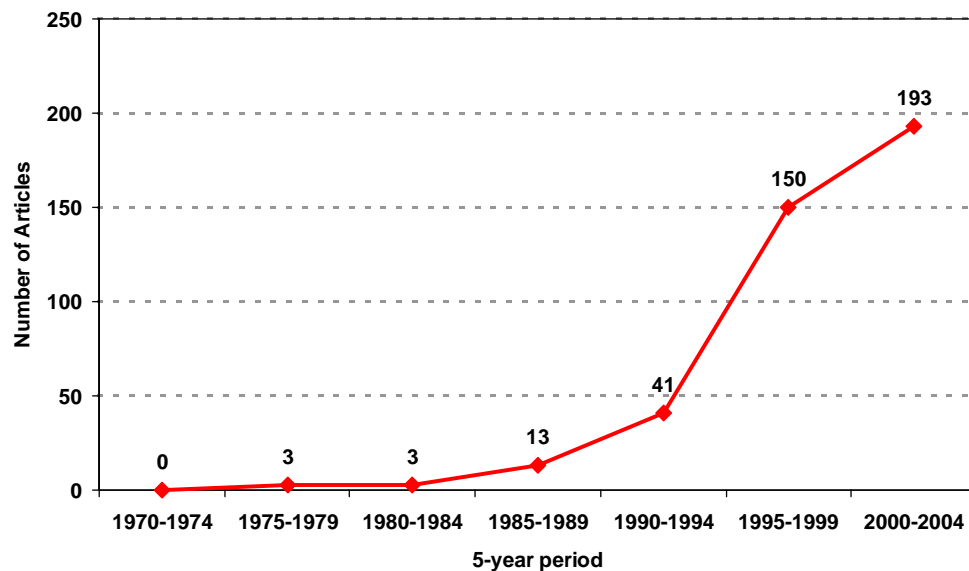
- 11,000 U.S. Fire Departments use investigative reports to update training
- OSHA 10-hour course on work zone safety
- AMSEA safety training for commercial fishermen

NIOSH Traumatic Injuries (TI) Research Program

◆ Impact of TI Program

Stimulation of research

- Explosion in workplace homicide research



NIOSH Traumatic Injuries (TI) Research Program

Conclusions

The NIOSH TI Research & Prevention Program

- Adaptive, “learning” program
- Systematic, multidisciplinary approach
- Data-driven, yet responsive to external input and emerging issues
- Priorities of r2p and impact