

Appendix 1: Supporting Evidence for the TI Goals/Sub goals

This Appendix contains lists of publications, presentations, conferences and workshops, partners and stakeholders, and miscellaneous other evidence that supports the Research Goal/Sub-goal write-ups in Section V of the TI Program Evidence Package.

For journal articles, the number of times the article has been cited in other literature is included in parentheses at the end of the citation where this information is known. For NIOSH publications, the number of total copies distributed, and the number of those that were requested (i.e., by mail, by phone, by fax, and by Web) are included in parentheses at the end of the citation. For a few of the publications, the number of copies requested is not known, so just the total distribution figure is given.

1. Reduce injuries and fatalities due to motor-vehicles

Sub goal 1.1: Reduce occupational injuries and fatalities due to **highway motor vehicle crashes**

Supporting Evidence:

Journal Articles

Ore T, Fosbroke DE [1997]. Motor vehicle fatalities in the United States construction industry. *Accident Analysis and Prevention* 29(5):613-626. (9 citations)

Pratt S [2004]. Work-related roadway crashes - United States, 1992-2002. *Morbidity and Mortality Weekly Report* 53(12):260-264.

NIOSH Publications

NIOSH [1997]. *NIOSH Alert: Preventing worker injuries and deaths from moving refuse collection vehicles*. Cincinnati, Ohio: Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health. DHHS (NIOSH) Publication No. 97-110. (20,292 distributed; 8,143 requested)

NIOSH [1998]. *NIOSH Alert: Preventing worker injuries and deaths from traffic-related motor vehicle crashes*. Cincinnati, Ohio: Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health. DHHS (NIOSH) Publication No. 98-142. (128,500 distributed; 20,355 requested)

NIOSH [2000]. Comments of the National Institute for Occupational Safety and Health on the Department of Labor Notice of Proposed Rulemaking and Request for Comments on Child Labor Regulations, Orders and Statements of Interpretation; Child Labor Violations – Civil Money Penalties, 29 CFR Parts 570 and 579. January 28, 2000.

NIOSH [2004]. Work-related roadway crashes: prevention strategies for employers. By Pratt SG, Le H, Marsh SM. Cincinnati, Ohio: Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health. DHHS (NIOSH) Pub. No. 2004-136. *(12,114 distributed; 9,848 requested)*

NIOSH [2004]. Work-related roadway crashes: who's at risk? By Marsh SM, Pratt SG. Cincinnati, Ohio: Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, 2004. DHHS (NIOSH) Pub. No. 2004-137. *(10,245 distributed; 8,330 requested)*

Pratt SG [2003]. Work-related roadway crashes: challenges and opportunities for prevention (NIOSH Hazard Review). Cincinnati, OH: Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health. DHHS (NIOSH) Pub. No. 2003-119. *(7,549 distributed; 4,778 requested)*

Pratt SG, Marsh SM, DeGuzman G [2005]. Older drivers in the workplace: crash prevention for employers and workers. NIOSH fact sheet. DHHS (NIOSH) Pub. No. 2005-159. *(5,496 distributed; 1,007 requested)*

Conference Papers and Presentations

Pratt S [2004a]. Occupational roadway fatalities in the USA: Differences by vehicle registration and vehicle type [Abstract] In: 7th World Conference on Injury Prevention and Safety Promotion, June 6-9, 2004, Vienna, Austria: Kuratorium fur Schutz und Sicherheit/Institut Sicher Leben , NN: 20024699.

Oleinick A, Gandra CR, Simon C, Werner RA [2006]. Nature of injury data in the BLS annual survey seriously underestimate the medical burden of work injuries. NORA Symposium 2006: Research Makes a Difference, April 18-26, 2006, Washington, DC.

Oleinick A, Werner RA, Blower DF, Gandra C, Simon CD [2006]. The utility of linked and transformed workers' compensation data to study work injuries by occupation among employees of Ohio for-hire carriers, 1997-1999. NORA Symposium 2006: Research Makes a Difference, April 18-26, 2006, Washington, DC.

Neuhoff JG, Preston JG [2003]. A spatial auditory display for the prevention of pedestrian-motor vehicle collisions. Proceedings of the 9th International Conference on Auditory Display, Boston, MA.

Husting EL [2006]. Health and wellness: future truck and bus safety research opportunities. In: Future truck and bus safety research opportunities [Conference Proceedings 38]. Washington, DC: Transportation Research Board, p. 48-54.

NIOSH Updates

NIOSH Update: Medical Interns' Risk for Car Crashes Linked With Extended Shifts in NIOSH-Funded Study - January 13, 2005

NIOSH Update: Requiring Safety Belt Use is Key Employer Policy for Preventing Job Vehicle Deaths, NIOSH Says - September 14, 2004

NIOSH Update: NIOSH Recommends Ways to Prevent Fatalities from Work-Related Roadway Crashes - April 7, 2004

NIOSH, OSHA, Roadway Work Zone Safety and Health Coalition Ally to Improve Roadway Work Zone Safety — November 26, 2003

Ways to Prevent Job-Related Roadway Deaths, Critical Research Areas Identified by NIOSH — November 6, 2003

NIOSH Report Highlights Motor Vehicle Crash Risk for Workers, Recommends Practical Preventive Measures — July 27, 1998

Fatality Investigation Reports

NIOSH [1991]. County garbage collector dies after falling from back end of moving garbage truck. Morgantown, WV: Fatality Assessment and Control Evaluation (FACE) Report No. 91-09.

NIOSH [1992]. Trash collector dies after being crushed by collection truck—Virginia. Morgantown, WV: Fatality Assessment and Control Evaluation (FACE) Report No. 92-31.

NIOSH [1994]. Tree trimmer foreman dies after being struck by a pickup truck. Morgantown, WV: Fatality Assessment and Control Evaluation (FACE) Report No. 94-07.

NIOSH [1994]. Sanitation worker run over after falling from trash collection vehicle—Virginia. Morgantown, WV: Fatality Assessment and Control Evaluation (FACE) Report No. 94-11.

NIOSH [1995]. Sanitation worker run over at solid waste transfer station—Virginia. Morgantown, WV: Fatality Assessment and Control Evaluation (FACE) Report No. 95-11.

NIOSH [1998]. Temporary laborer crushed by dump truck at landfill -- South Carolina. Morgantown, WV: Fatality Assessment and Control Evaluation (FACE) Report No. 98-10

Other Publications

Castillo DN, Pratt SG, Mardis AL, Hendricks KJ [2002]. National Institute for Occupational Safety and Health (NIOSH) recommendations to the U.S. Department of Labor for changes to Hazardous Orders. Report to the U.S. Department of Labor, Employment Standards Administration, Wage and Hour Division.

Chen G, Jenkins EL, Husting L [2004]. A comparison of crash patterns in heavy trucks with and without collision warning system technology. In Safety Performance and Accident Free Driving. SAE Special Publication. Warrendale, PA: SAE Inc. ISBN 0-7680-1533-2. 31-36. [Reprinted in SAE 2004 Transactions of Journal of Commercial Vehicles 2004; 113(2): 360-365.]

Husting EL, Biddle E [2005]. Truck safety in the age of information. In: Trucking in the age of information. Burlington, VT: Ashgate Publishing Company, p. 247-268.

NIOSH [2000]. Comments of the National Institute for Occupational Safety and Health on the Federal Motor Carrier Safety Administration Proposed Revision of the Hours of Service Rules for Commercial Carriers, 49 CFR Part 395, Docket No. FMCSA 97-2350. December 14, 2000.

NIOSH [2005]. Comments of the National Institute for Occupational Safety and Health on the Federal Motor Carrier Safety Administration Notice of Proposed Rulemaking on the Hours of Service of Drivers, 49 CFR Parts 385, 390, and 395, Docket No. FMCSA 2004-19608. Cincinnati, OH: National Institute for Occupational Safety and Health. March 2005.

Reports from TI Supported Extramural Research

Barger LK, Cade BE, Ayas NT, Cronin JW, Rosner B, Speizer FE, Czeisler CD [2005]. Extended work shifts and the risk of motor vehicle crashes among interns. *New England Journal of Medicine* 352:125-134

Sub goal 1.2: Reduce occupational injuries and fatalities due to motor vehicle incidents in highway and street construction **work zones**

Supporting Evidence:

Journal Articles

Ruff TM [2005]. Evaluation of a radar-based proximity warning system for off-highway dump trucks. *Accident Analysis and Prevention* 38: 92-98.

NIOSH Publications

Pratt SG, Fosbroke DE, Marsh SM [2001]. Building safer highway work zones: measures to prevent worker injuries from vehicles and equipment. Cincinnati, OH: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2001-128. (21,563 distributed; 16,810 requested)
(This publication authored by TI researchers resulted from a 1998 TI program sponsored workshop that focused on preventing vehicle- and equipment-related worker injuries in highway work zones.)

Ruff TM [2003]. Evaluating systems to monitor blind areas behind trucks used in road construction and maintenance – phase I. Cincinnati, OH: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2003-113.

Conference Papers and Presentations

Fosbroke DE, Beaupre J, Hammer R [2006]. Designing internal traffic control plans. Invited presentation at the Plants, People, and Paving Training Conference, World of Asphalt, Orlando FL, March 15.

Fosbroke DE [2006]. Evaluation of injury prevention measures inside roadway work zones: 2006 update. Invited presentation at the 51st Annual National Asphalt Pavement Association Meeting, Hollywood, FL, January 22.

Fosbroke DE [2004]. NIOSH Reports! Studies on heavy equipment blind spots and internal traffic control. Presentation at the Third International Roadway Construction Safety and Health Conference, Baltimore, MD, November 4.

Marsh SM [2004]. Evaluating roadway construction work zone interventions. Presented at the 37th Annual Meeting of the North American Association of Transportation Safety and Health Officials, Indianapolis, IN, August 4.

Beaupre J, Hause M, Hammer R [2004]. Preventing workers from being struck by roadway construction equipment. Presented at the 14th Annual Construction Safety Conference and Exposition, Rosemont, IL, February 10.

Ruff TG, Fosbroke DE [2003]. NIOSH testing of proximity warning devices on road construction equipment. Invited presentation at the 2003 Mid-West Work Zone Safety Conference, Springfield, IL, December 3.

Hause MG [2003]. Defining hazard areas around construction equipment. Presented at the National Occupational Injury Research Symposium, Pittsburgh, PA, October 28-30.

Hendricks SA [2003]. Tracking worker and equipment positions with GPS receivers. Presented at the National Occupational Injury Research Symposium, Pittsburgh, PA, October 28-30.

Pratt SG, Fosbroke DE [2002]. Building safer highway work zones. Presented at the Ninth Occupational Safety and Health Conference: Knowledge and Education: Milestones in Accident Prevention, Dorado, Puerto Rico, December 11.

Pratt SG [2002]. Roadway worker deaths during night operations: what do the data show? Presented at the Second International Roadway Work Zone Safety Conference, Lake Buena Vista, FL, December 5.

Pratt SG, Fosbroke DE [2002]. Preventing worker deaths and injuries in roadway construction: a synthesis of industry practice, injury surveillance data, and current research. Presented at the Sixth World Injury Conference, Montreal, Quebec, May 13.

Fosbroke DE [2001]. Working safely around traffic vehicles and construction equipment. Presented at the International Union of Operating Engineers Annual Training Conference, Lake Buena Vista, FL, November 12.

Fatality Investigation Reports

NIOSH [2004]. Hispanic laborer on roadway construction work site run over and killed by a backing flat bed dump truck - North Carolina. Morgantown, WV: Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, Fatality Assessment and Control Evaluation (FACE) Report No. 2004-11.

NIOSH [2004]. Hispanic flagger dies after being run over by a dump truck - North Carolina. Morgantown, WV: Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, Fatality Assessment and Control Evaluation (FACE) Report No. 2004-10.

NIOSH [2002]. Construction laborer dies after being run over and crushed by a grader at a road construction site - North Carolina. Morgantown, WV: Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, Fatality Assessment and Control Evaluation (FACE) Report No. 2002-03.

NIOSH [2002]. Roadway construction worker dies from crushing injuries when backed over by a dump truck - Virginia. Morgantown, WV: Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, Fatality Assessment and Control Evaluation (FACE) Report No. 2002-06.

NIOSH [2001]. State Department of Transportation worker (laborer) dies after being struck by motor vehicle - North Carolina. Morgantown, WV: Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, Fatality Assessment and Control Evaluation (FACE) Report No. 2001-01.

NIOSH [2001]. State Department of Transportation highway maintenance worker dies after being struck by a car while installing reflectors on a guardrail. Morgantown, WV: Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, Fatality Assessment and Control Evaluation (FACE) Report No. 2001-02.

NIOSH [2001]. Seventeen-year-old part-time road construction laborer dies after being run over by a water truck - Indiana. Morgantown, WV: Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, Fatality Assessment and Control Evaluation (FACE) Report No. 2001-10.

NIOSH [2000]. Flagger struck from behind and killed by a truck intruding into a highway construction work zone - Wisconsin. Morgantown, WV: Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, Fatality Assessment and Control Evaluation (FACE) Report No. 2000-02.

Other Publications

NIOSH [2003]. Comments of the National Institute for Occupational Safety and Health on the Federal Highway Administration Proposed Rule on Work Zone Safety and Mobility, 23 CFR Part 630, FHWA Docket No. FHWA-2001-11130. September 2003.

NIOSH [2002]. Comments of the National Institute for Occupational Safety and Health on the Department of Transportation Notice of Proposed Amendments to the Manual on Uniform Traffic Control Devices (MUTCD); Request for Comments. 23 CFR Part 655, FHWA Docket No. FHWA-2001-11159. August 2002.

Contractor Reports

Caterpillar [2004]. Construction vehicle and equipment blind area diagrams, final report – contract modification. Prepared under NIOSH Contract No. 200-2002-00563. Peoria, IL: Caterpillar, Inc.

C.L. Williams Consulting, Inc. [2004]. Internal traffic control plans, sites 1 and 2: internal traffic control plans for Portland cement concrete paving operation.

Prepared under NIOSH Contract No. 200-2002-00596, Modification No. 1.
Lakeside, AZ: C.L. Williams Consulting, Inc.

Caterpillar [2003]. Construction vehicle and equipment blind area diagrams, final report. Prepared under NIOSH Contract No. 200-2002-00563. Peoria, IL: Caterpillar, Inc.

C.L. Williams Consulting, Inc. [2003]. Revised internal traffic control plans, sites 1 and 2: internal traffic control plans for asphalt paving operations on freeway segments. Prepared under NIOSH Contract No. 200-2002-00596. Lakeside, AZ: C.L. Williams Consulting, Inc.

C.L. Williams Consulting, Inc. [2003]. Internal traffic control plan draft development guide: internal traffic control plans for asphalt paving operations on freeway segments. Prepared under NIOSH Contract No. 200-2002-00596. Lakeside, AZ: C.L. Williams Consulting, Inc.

Roadway Work Zone Safety and Health Coalition Alliance [2005]. Internal traffic control plans. Prepared under CDC Contract No. 212-2003-M-02677. Washington DC: Laborers' Health and Safety Fund of North America.

2. Reduce injuries and fatalities due to falls from elevations

Sub goal 2.1: Reduce worker falls from roofs

Supporting Evidence:

Journal Articles

Simeonov P, Hsiao H, Powers J, Ammons D, Amendola A, Kau T, Cantis D [2006]. Footwear effects on walking balance at elevation. (submitted to the *Ergonomics* journal)

Conference Papers and Presentations

Hsiao H [2005]. Falls Prevention (keynote speech), Slip, Trip, and Fall Symposium, the Ergonomics Society annual conference (UK), 2005.

Hsiao H, Dotson BW [2000]. Safe work at elevation through virtual reality simulation. NOIRS 2000--Abstracts of the National Occupational Injury Research Symposium 2000, Pittsburgh, PA, October 17-19, 2000, Pittsburgh, PA: National Institute for Occupational Safety and Health, 60-61.

Pan C, Hoskin A, Lin M, Castillo D, McCann M, Fearn K [2005]. Incidents Due to Aerial Work Platforms. Proceedings of XVIIth World Congress on Safety and Health at Work, Orlando, FL, 2005.

Simeonov P, Hsiao H, Dotson B, Ammons D [2002]. Comparing standing balance at real and virtual elevated environments, *Proceedings of the Human Factors and Ergonomics Society 46th Annual Meeting 2002*, Sep-Oct, 2169-2173.

Sub goal 2.2: Improve fall-arrest harnesses

Supporting Evidence:

Journal Articles

Hsiao H, Bradtmiller B, Whitestone J [2003]. Sizing and Fit of Fall-Protection Harnesses. *Ergonomics* 46(12): 1233-1258. (1 Citation)

Hsiao H, Long D, Snyder K [2002]. Anthropometric Differences among Occupational Groups. *Ergonomics* 45(2): 136-152.

Hsiao H, Whitestone J, and Kau T [2006]. Evaluation of Fall-Arrest Harness Sizing Scheme. *Human Factors* 48. [in press]

Conference Papers and Presentations

Hsiao H, Whisler R, Kau T, Zwiener J, Guan J, and Spahr J [2005]. Constructing New Harness Fit Charts using 3D Anthropometric Information. *Contemporary Ergonomics* 3:7, April 4 – 7, 2005, Hertfordshire, England.

Hsiao H [2004]. Anthropometric Procedures for Design Decisions: From Flat Map to 3D Scanning. *Contemporary Ergonomics*, proceedings of the Ergonomics Society Conference in April 2004. Boca Raton, FL: CRC Press, pages 144-148.

Friess M, Rohlf FJ, Hsiao H [2004]. Quantitative assessment of human body shape using Fourier analysis, in proceedings of SPIE—The International Society for Optical Engineering Conference, January 18-22, 2004, San Jose, California.

Bradtmiller B, Whitestone J, Feldstein J, Hsiao H, Snyder K [2000]. Improving Fall Protection Harness Safety: Contributions of 3-D Scanning. in *Scanning 2000—Numerisation 3D*, 5th ed. Proceedings of the Industrial Congress on 3D Digitizing, Paris, France, May 24-25, 2000. Dinard Cedex, France: Harbour, pp. 117-128.

Turner N, Weaver D, Whisler R, Zwiener J, Wassell J [2006]. Suspension tolerance in men and women wearing safety harnesses, presented at the American Industrial Hygiene Conference and Exposition, Chicago, IL, 2006. (Abstract No. 144)

Patents

Provisional patent application was filed on July 14, 2006 for a harness accessory which automatically supports a wearer in a sitting position with the knees elevated at a position at or above the hips after a fall (CDC Ref. No. I-002-06).

Sub goal 2.3: Reduce worker falls from **telecommunication towers**

Supporting Evidence:

NIOSH Publications

NIOSH [2001]. NIOSH Alert: Preventing injuries and deaths from falls during construction and maintenance of telecommunication towers. Morgantown, WV: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2001-156. (25,444 distributed; 24,765 requested)

Fatality Investigation Reports

NIOSH [1992]. FACE 92-05: Painter dies after 80-foot fall from electrical transmission tower in Indiana. Morgantown, WV: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.

NIOSH [1997]. FACE 97-10: Tower erector/inspector dies after falling 200 feet from a telecommunication tower to the ground-North Carolina. Morgantown, WV: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.

NIOSH [1998]. FACE 98-05: Tower worker dies after falling 130 feet from hoist cable to ground-Pennsylvania. Morgantown, WV: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.

NIOSH [1998]. FACE 98-07: Tower erector dies after falling 125 feet from cellular phone tower-South Carolina. Morgantown, WV: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.

NIOSH [1998]. FACE 98-20: Tower erector dies after falling 200 feet from telecommunication tower-North Carolina. Morgantown, WV: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.

NIOSH [1998]. FACE 98-21: Tower painter dies and a second painter injured after falling 900 feet while inside a man basket-South Carolina. Morgantown, WV: U.S. Department of Health and Human Services, Public Health Service,

Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.

NIOSH [1998]. 98MO161: Tower construction worker dies following 940-foot fall from television tower. Morgantown, WV: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.

NIOSH [1999]. FACE 99-01: Tower hand dies after 230-foot fall from communication tower-North Carolina. Morgantown, WV: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.

NIOSH [1999]. 99MO138: Tower construction worker dies following 40-foot fall from cellular tower. Morgantown, WV: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.

NIOSH [2000]. FACE2000-07: Three tower painters die after falling 1,200 feet when riding the hoist line-North Carolina. Morgantown, WV: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.

NCDOL (State of North Carolina Department of Labor) (2005). Title 13 of the North Carolina Administrative Code State Specific Rule 07F.0600 (13 NCAC 07F.0600) *Communications Towers*, effective February 1, 2005.

3. Reduce injuries and fatalities due to workplace violence

Supporting Evidence:

Journal Articles

Hendricks S, Jenkins EL, Anderson KR. Trends in workplace homicides in the U.S. 1993-2002: a decade of decline. *American Journal of Industrial Medicine*, Submitted for publication, May, 2006.

Hartley D, Biddle EA, Jenkins EL [2005]. Societal cost of workplace homicides in the United States, 1992-2001. *American Journal of Industrial Medicine* 47: 518-527.

Anderson KR, Tyler MP, Jenkins EL [2004]. Preventing workplace violence. *Journal of Employee Assistance* 34(4): 8-11.

Peek-Asa C, Jenkins EL [2003]. Workplace violence: how do we improve approaches to prevention? *Clinics in Occupational and Environmental Medicine* 3(4): 659-672.

Faulkner KA, Landsittel DP, Hendricks SA [2001]. Robbery characteristics and employee injuries in convenience stores. *American Journal of Industrial Medicine* 40(6):703-709, Dec. (2 Citations)

Hendricks SA, Landsittel DP, Amandus HE, Malcan J, Bell J [1999]. A matched case-control study of convenience store robbery risk factors. *Journal of Occupational and Environmental Medicine* 41(11):995-1004. (9 Citations)

Amandus HE, Hendricks SA, Zahm D, et. al. [1997]. Convenience store robberies in selected metropolitan areas – Risk factors for employee injury. *Journal of Occupational and Environmental Medicine* 39(5):442-447, May. (9 Citations)

Jenkins EL [1996]. Homicide Against Women in the Workplace. *Journal of the American Medical Women's Association* 51(3):118-122.

Amandus HE, Zahm D, Friedmann R, et al. [1996]. Employee injuries and convenience store robberies in selected metropolitan areas. *Journal of Occupational and Environmental Medicine* 38(7):714-720. (5 Citations).

Amandus HE, Hunter RD, Hendricks JES [1995]. Reevaluation of the effectiveness of environmental designs to reduce robbery risk in Florida convenience stores. *Journal of Occupational and Environmental Medicine* 37(6): 711-717.

Castillo DN, EL Jenkins [1994]. Industries and Occupations at High Risk for Work-Related Homicide. *Journal of Occupational Medicine* 36(2):125-132.

Goodman RA, Jenkins EL, Mercy JA [1994]. Workplace-Related Homicide Among Health Care Workers in the United States, 1980 Through 1990. *Journal of the American Medical Association* 272:1686-1688.

Jenkins EL [1994]. Occupational Injury Deaths Among Females: The U.S. Experience for the Decade 1980-1989. *Annals of Epidemiology* 4:146-151.

Jenkins EL [1996]. Workplace Homicide: Industries and Occupations at High Risk. *Occupational Medicine: State of the Art Reviews* 11(2):219-225. (12 Citations)

Centers for Disease Control and Prevention (CDC) [1994]. Occupational Injury Deaths of Postal Workers—United States, 1980-1989. *Morbidity and Mortality Weekly Report* 43(32):593-595.

Jenkins EL, Layne LA, Kisner SM [1992]. Homicide in the Workplace: The U.S. Experience, 1980-1988. *AAOHN Journal* 40(5): 215-218.

Bell CA [1991]. Female Homicides in United States Workplaces, 1980-1985. *American Journal of Public Health* 81(6):729-732.

NIOSH Publications

NIOSH [2006]. Workplace Violence Prevention Strategies and Research Needs: Report from the Conference Partnering in Workplace Violence Prevention: Translating Research to Practice, November 17–19, 2004, Baltimore, Maryland. NIOSH Publication No. 2006-144. Cincinnati, OH: National Institute for Occupational Safety and Health, 38 pp. *(2,967 distributed; 1,405 requested)*

NIOSH [2004]. Violence on the Job (DVD). Washington, DC: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health. DHHS (NIOSH) Publication No. 2004-100d. *(32,101 distributed; 20,038 requested)*

NIOSH [2002]. Violence: Occupational Hazards in Hospitals. Washington, DC: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health. DHHS (NIOSH) Publication No. 2002-101. *(41,273 distributed; 35,563 requested)*

Jenkins EL [1996]. Current Intelligence Bulletin 57, Violence in the Workplace: Risk Factors and Prevention Strategies. DHHS (NIOSH) Publication No. 96-100. *(83,242 distributed; 36,264 requested)*

NIOSH [1993]. Alert: Request for Assistance in Preventing Homicide in the Workplace. Cincinnati, OH: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health. DHHS (NIOSH) Publication No. 93-109.

NIOSH [1993]. Fatal Injuries to Workers in the United States, 1980-1989: A Decade of Surveillance, DHHS (NIOSH) Publication No. 93-108. Cincinnati, OH: National Institute for Occupational Safety and Health, 27 pp. (August 1993).

Bell CA, Jenkins EL [1992]. Homicide in U.S. Workplaces: A Strategy for Prevention and Research. DHHS (NIOSH) Publication No. 92-103. Cincinnati: National Institute for Occupational Safety and Health.
(This publication summarizes discussions from a NIOSH sponsored workshop on occupational homicide held in Washington, DC on July 23-24, 1990. A panel of 14 experts from government agencies, academia, private industry, and trade associations participated by discussing limitations of available data, important research issues, areas where further research is needed, and evaluation of known prevention strategies.)

Other Publications

Quick JC, Piotrkowski C, Jenkins EL, Brooks YB [2003]. Four Dimensions of Healthy Work: Stress, Work-Family Relations, Violence Prevention, and Relationships at Work. [Book Chapter] In: *Psychology Builds A Healthy World: Opportunities for Research and Practice*, 233-273.

Jenkins EL [2002]. Existing evidence of the prevalence of violence in health services within different geographical, social, and economic settings. In: *Workplace violence in the health sector: State of the Art*. Edited by Cary L. Cooper and Naomi G. Swanson. International Labor Organization.

Fisher BS, Jenkins EL, Williams N [1998]. The Extent and Nature of Homicide and Non-fatal Workplace Violence in the United States: Implications for Prevention and Security in *Crime at Work: Increasing the Risk for Offenders, Volume II*. Edited by Martin Gill. Perpetuity Press, Leicester, UK.

Jenkins EL [1998]. Prevention Strategies and Research Needs in Violence in the Workplace: Preventing, Assessing, and Managing Threats at Work. Edited by Carol W. Wilkinson. Rockville, MD: Government Institutes.

Jenkins EL [1998]. Violence in the Workplace: Scope of the Problem and Risk Factors in Violence in the Workplace: Preventing, Assessing, and Managing Threats at Work. Edited by Carol W. Wilkinson. Rockville, MD: Government Institutes.

Workshops, Conferences, and Meetings

Federal Interagency Task Force: NIOSH coordinated and hosted meetings of a task force of 20 federal agencies which met 4 times during 2002-2005 (Jan. 2003, Sept. 2003, Apr. 2004 and Nov. 2005). Provides an opportunity for all of the agencies that are doing work or who have an interest in workplace violence research to share information and identify opportunities for collaborative efforts. The purpose of the meetings was to determine WPV problems in federal agencies, what types of programs and research was being done, and areas for collaboration. Out of these meetings, NIOSH developed partnerships with DOL/BLS, DOJ/BJS, CPSC/NEISS, VHA and NIJ. NIOSH provided funds to BLS, BJS, and NIJ for survey of employers (BLS), victims of crimes (BJS NCVS), and emergency room visits for WPV (CPSC NEISS survey). Surveys were completed during 2002-2005 and results are presently being analyzed and reports prepared. BLS has already released statistics to the media for the employer survey.

NIOSH-VHA Partnership. NIOSH has partnered with VHA to evaluate interventions in VHA hospitals. The VHA provided funds to NIOSH to complete a pilot study of 5 hospital WPV intervention programs. NIOSH and VHA are jointly funding an evaluation study of an intervention to prevent patient violence towards staff in psychiatric hospitals.

NIJ Task Force. TI staff members have participated on a NIJ task force on an evaluation of the effects of Tasers used by police to subdue perpetrators.

University of Iowa Workshop on Workplace Violence Intervention Research. TI sponsored and participated in this workshop that was held in Washington, DC on April 5-7, 2000. A panel of 37 invited participants representing private industry, organized labor, municipal, state, and federal governments, and academia met to examine issues related to all four types of violence in the workplace and to develop recommended research strategies to address this public health problem. In addition to the conference summary report (*Workplace Violence: A Report to the Nation*), published by the University of Iowa in February 2001, peer-reviewed papers from this conference were published in the American Journal (Am. J. Med., 2001:20(2)).

1994 NIOSH Conference on Silent Epidemics in the Workplace.

Workplace violence was one of four occupational safety and health topics targeted for interdisciplinary discussion and prevention effort in this 1994 Workshop.

The 1995 National Violence Prevention Conference

TI organized the workplace violence track, one of four primary tracks within the conference. The sessions brought together academic and government researchers; industry and labor representatives; and Federal, State, and local government policy makers to identify the state of WPV knowledge and remaining research and prevention gaps.

2003 TI Workplace Violence Prevention Stakeholder Meetings

Healthcare industry – May 2003. A diverse group of 38 attendees representing trade associations, federal partners, state agencies, and labor unions participated in discussions concerning strategies for prevention of violence against healthcare workers. Presentations were designed to inform participants about the TI and OSHA efforts in prevention of violence directed towards healthcare workers. After these brief presentations, each person in attendance was given some time to describe their organizations' efforts, successes, and trials in preventing workplace violence directed towards healthcare workers. Attendees were asked to describe ways that TI could assist them in preventing workplace violence. A recommendation from this group was that TI organize and sponsor a conference designed to share the "best practices" of workplace violence prevention in the healthcare setting.

Domestic Violence in the Workplace – June 2003. A diverse group of 38 attendees representing trade associations, federal partners, state agencies, and labor unions participated in discussions concerning strategies for prevention of domestic violence incidents in the workplace. Presentations were designed to inform participants about the TI, CDC, and FBI efforts in prevention of domestic violence in the workplace. After these brief

presentations, each person in attendance was given some time to describe their organizations' efforts, successes, and trials in preventing domestic violence in the workplace. Attendees were asked to describe ways that TI could assist them in preventing workplace violence. A recommendation from this group was that TI organize and sponsor more meetings that address the issue of preventing domestic violence in the workplace.

Retail Industry – August 2003. Seventeen people representing a cross-sector of private industry, trade associations, federal partners interested in preventing retail industry violence participated. Presentations were designed to inform participants about the TI and OSHA efforts in prevention of violence directed towards retail workers. After these brief presentations, each person in attendance was given some time to describe their organizations' efforts, successes, and trials in preventing workplace violence directed towards retail workers. Attendees were asked to describe ways that TI could assist them in preventing workplace violence. A recommendation from this group was that TI research why the presence of certain risk factors makes an establishment an attractive target to someone intent on committing a crime

Security/Law Enforcement – November 2003

A diverse group of 25 attendees representing trade associations, federal partners, state agencies, and labor unions participated in discussions concerning strategies for prevention of violence against security and law enforcement officers. Presentations were designed to inform participants about the TI and OSHA efforts in prevention of violence directed towards security workers. After these brief presentations, each person in attendance was given some time to describe their organizations' efforts, successes, and trials in preventing workplace violence directed towards security workers. Attendees were asked to describe ways that TI could assist them in preventing workplace violence. A recommendation from this group was that TI evaluate the use of community policing as a method of preventing violence against security personnel.

4. Reduce injuries and fatalities due to machines

Sub goal 4.1: Reduce injuries and deaths caused by tractor rollovers by increasing availability and use of effective *roll-over-protective structures (ROPS)*

Supporting Evidence:

Journal Articles

Hsiao H, Whitestone J, Bradtmiller B, Zwiener J, Whistler R, Kau T, Gross M, Lafferty C [2005]. Anthropometry criteria for the design of tractor cabs and protection frames. *Ergonomics* 48(4):323-353.

Etherton JR, McKenzie Jr EA, Lutz TJ, Cantis DM, Kau TY [2004]. An Initial Farmer Evaluation of a NIOSH AutoROPS Prototype. *International Journal of Industrial Ergonomics* 34:155-165

Etherton JR, Cutlip RG, Harris JR, Ronaghi M, Means KH, Howard S. [2002]. Dynamic performance of the mechanism of an automatically deployable ROPS. *Journal of Agricultural Safety and Health* 8(1):113-118.

Etherton JR, Cutlip RG, Harris JR, Ronaghi M, Means KH, Gillispie A. [2002]. Static load test performance of a telescoping structure for an automatically deployable ROPS. *Journal of Agricultural Safety and Health* 8(1):119-126.

Hsiao H, Long D, Snyder K. [2002]. Anthropometric differences among occupational groups. *Ergonomics* 45(2):136-152.

Pana-Cryan R, Myers ML [2002]. Cost effectiveness of Roll-Over Protective Structures. *American Journal of Industrial Medicine* 42(S2):68-71.

Powers JR, Harris JR, Etherton JR, Snyder KA, Ronaghi M, Newbraugh BH. [2001]. Performance of an automatically deploying ROPS on ASAE Tests. *Journal of Agricultural Safety and Health* 7(1):51-61.

Powers JR, Harris JR, Etherton JR, Ronaghi M, Snyder KA, Lutz TJ, Newbraugh BH. [2001]. Preventing tractor rollover fatalities: performance of the NIOSH AutoROPS. *Injury Prevention* 7(Suppl. 1):54-58.

Myers ML. [2000]. Prevention effectiveness of Roll-Over Protective Structures-Part I: strategy evolution. *Journal of Agricultural Safety and Health* 6(1):29-40.

Myers ML, Pana-Cryan R. [2000]. Prevention effectiveness of Roll-Over Protective Structures-Part II: decision analysis. *Journal of Agricultural Safety and Health* 6(1):41-55.

Pana-Cryan, Myers ML. [2000]. Prevention effectiveness of Roll-Over Protective Structures-Part III: economic analysis. *Journal of Agricultural Safety and Health* 6(1):57-70.

Harris JR, Ronaghi M, Snyder KA. [1998]. Analyzing tractor rollovers using finite element modeling. *Analysis Solutions* 2(4):24-25.

Myers JR, Snyder KA, Hard DL, Casini VJ, Cianfrocco R, Fields J, Morton L. [1998]. Statistical and epidemiology of tractor fatalities-a historical perspective. *Journal of Agricultural Safety and Health* 4(2):95-108.

Myers ML. [1998]. NIOSH perspective on tractor-related hazards. *Journal of Agricultural Safety and Health* 4(4):205-230.

Conference Papers and Presentations

McKenzie EA Jr, Etherton JR, Harris JR, Cantis DM, Lutz TJ [2005]. NIOSH AutoROPS Research to Practice: Zero Turn Commercial Mowers, in the Proceedings of 2005 American Society of Mechanical Engineers, Congress and Exposition, Orlando, FL, November 11, 2005.

Ronaghi M, Abukhadra SM, McKenzie EA Jr, Etherton JR, Means KH [2005]. Finite Element Modeling of a Fiber Reinforced Plastics Composite Materials in Automatically Deployable Rollover Protective Structure, in the Proceedings of 2005 American Society of Mechanical Engineers, Congress and Exposition, Orlando, Florida, November 8, 2005.

Lutz TJ, McKenzie EA Jr [2005]. Remote Control on a Zero-turn Commercial Lawn Mower To Conduct SAE J2194 Rollover Test, in the Proceedings of the 2005 American Society of Agricultural Engineers Annual International Meeting, Tampa, FL, July 17-20, 2005.

Harris JR, Cantis DM, McKenzie EA Jr, Etherton JR, Ronaghi M, Commercialization of cost-effective rollover protective structures (CROPS): research-in-progress, in the Proceedings of the National Institute for Farm Safety (NIFS) Annual Conference, Wintergreen, Virginia, June 26-30, 2005.

Guan J, Hsiao H, Zwiener J, Current RS, Newbraugh BH, Powers JR, Spahr J [2005]. Injury Potential to a Seat-Belted Operator During a Rear and Side Overturn of a ROPS Equipped Farm Tractor, in the Proceedings of the National Institute for Farm Safety Conference, Wintergreen, VA, June 28, 2005, Abstract, p.81.

Etherton JR, McKenzie EA, Powers JR [2004]. Commercializing an Automatically Deployable Rollover Protective Structure (AutoROPS) for a Zero-Turn Riding Mower: Initial Product Safety Assessment Criteria, in the Proceedings of the ASME International Mechanical Engineering Congress and Exposition, Anaheim, California, November 13-19, 2004.

Harris JR, Etherton JR, Cantis DM, McKenzie EA Jr, Ronaghi M [2004]. Tractor Overturns and ROPS Performance - Is the SAE Standard Tough Enough. National Symposium on Agricultural Safety and Health, Keystone Resort, Colorado, June 20-24, 2004.

Harris JR, McKenzie EA Jr, Cantis DM, Etherton JR, Ronaghi M [2004]. Technology transfer – Putting cost-effective rollover protective structures in the field, National Symposium on Agricultural Safety and Health, Keystone Resort, Colorado, June 20-24, 2004.

Guan J, Hsiao H, Current RS, Powers JR, Ammons DE [2003]. Traumatic Injury Potential to Seat Belted Operator During a Rearward Overturn of a ROPS Equipped Farm Tractor, NORA Meeting, Arlington, Virginia, June 23-24, Abstract, p.51.

McKenzie EA Jr, Etherton JR, Harris JR, Cantis DM, Lutz TJ [2003]. NIOSH AutoROPS 3rd Generation Static Testing and Human Interaction Element, in the Proceedings of the 2003 American Society of Mechanical Engineers Congress and Exposition, Washington, DC, November 15-21, 2003.

McKenzie EA Jr, Etherton JR [2002]. NIOSH AutoROPS Latch and Release Mechanism: Second Generation, in the Proceedings of the 2002 American Society of Mechanical Engineers Congress and Exposition, New Orleans, Louisiana, November 17-22, 2002.

Harris JR, McKenzie EA Jr, Etherton JR Cantis DM, Designing Cost-effective Rollover Protective Structures (CROPS) at NIOSH, in the Proceedings of the National Institute for Farm Safety (NIFS) Annual Conference, Ponte Verda, Florida, June 23-27, 2002.

McKenzie EA Jr, Etherton JR [2002]. Novel Latch and Release Mechanism for an Automatically Deployable ROPS, Agricultural Equipment Technology Conference, Kansas City, MO, February 20-23, 2002.

McKenzie EA Jr, Powers JR, Harris JR, Ronaghi M, Etherton JR, Current RS, Cantis DM, Newbraugh BH, Lutz TJ [2001]. Continuing Developments at NIOSH on ROPS for Agricultural Tractors, in the Proceedings of the National Institute for Farm Safety Annual Conference, Pittsburgh, Pennsylvania, June 24-27, 2001.

Powers JR, Harris JR, Snyder KA, Ronaghi M, Etherton JR, Newbraugh BH [2000]. Performance of the NIOSH AutoROPS, National Occupational Injury Research Symposium (NOIRS) 2000, Pittsburgh, Pennsylvania, October 17-19, 2000, Abstract, p.12.

Ronaghi M, Harris JR, Powers JR, Snyder KA [2000]. Dynamic Nonlinear Analysis of Tractor Rollovers, in the Proceedings of the 9th International ANSYS Conference and Exhibition, Pittsburgh, Pennsylvania, August 28-30, 2000.

Powers JR, Harris JR, Etherton JR, Snyder KA, Ronaghi M, Newbraugh BH [2000]. Performance of a New ROPS on ASAE Tests, in the Proceedings of the 93rd Annual International Meeting of ASAE, Paper No. 007005, Milwaukee, Wisconsin, July 9-12, 2000.

Harris JR, Mucino V, Etherton JR, Snyder KA, Means KH, Computer simulation of ROPS testing in ASAE S519, National Occupational Injury Research

Symposium (NOIRS) 1997, Morgantown, West Virginia, October 15-17, 1997, Abstract, p.46.

Other Publications

Myers JR [2003]. Tractor occupational safety and health update, in Record of Tractor- Related Injury and Death Meeting. Pittsburgh, PA, February 13-14, 2003, pp. 5-23. Morgantown, WV: NIOSH.

*Sub goal 4.2: Reduce worker injuries and deaths caused by **paper balers***

Supporting Evidence:

Journal Articles

Moore P, Burkhart J [2001]. Baler and compactor-related deaths in the workplace--United States, 1992-2000, *Morbidity and Mortality Weekly Report* 50(16):309-313.

NIOSH Publications

NIOSH [1997]. Control of scrap paper baler crushing hazards. Cincinnati, OH: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, NIOSH Publication No. 97-113. (26,416 distributed; 2,717 requested)

*Sub goal 4.3: Reduce injuries and deaths caused by machines through the conduct of **fatality investigations** and **dissemination of prevention strategies***

Supporting Evidence:

NIOSH Publications

NIOSH [2006] Preventing Workers Injuries and Deaths from Mobile Crane Tip-Over, Boom Collapse, and Uncontrolled Hoisted Loads. Cincinnati, Ohio: Department of Health and Human Services, Center for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2006-142. (10,680 distributed; 624 requested)

NIOSH [2003] Preventing Deaths and Injuries While Compacting or Baling Refuse Material. Cincinnati, Ohio: Department of Health and Human Services, Center for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2003-124. (6,930 distributed; 5,391 requested)

NIOSH [2001]. Preventing Injuries and Deaths of Workers Who Operate or Work Near Forklifts. Cincinnati, Ohio: Department of Health and Human Services, Center for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2001-109. (32,442 distributed)

NIOSH [1998]. Preventing Injuries and Deaths from Skid-Steer Loaders. Cincinnati, Ohio: Department of Health and Human Services, Center for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 1998-117. *(20,413 distributed; 7,595 requested)*

NIOSH [1995]. Preventing Electrocutions of Crane Operators and Crew Members Working Near Overhead Power Lines. Cincinnati, Ohio: Department of Health and Human Services, Center for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 1995-108.

NIOSH [1994]. Preventing Scalping and Other Severe Injuries from Farm Machinery. Cincinnati, Ohio: Department of Health and Human Services, Center for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 1994-105.

NIOSH [2005]. Preventing Injuries When Working With Ride-On Rollers/Compactors. Cincinnati, Ohio: Department of Health and Human Services, Center for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2005-101. *(27,781 distributed)*

NIOSH [2004]. Preventing Injuries When Working With Hydraulic Excavators and Backhoe Loaders. Cincinnati, Ohio: Department of Health and Human Services, Center for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2004-107. *(17,233 distributed; 7,865 requested)*

NIOSH [1999]. Injury Associated with Working Near or Operating Wood Chippers. Cincinnati, Ohio: Department of Health and Human Services, Center for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 99-145. *(32,757 distributed; 5,613 requested)*

NIOSH [1998]. Ignition Hazard From Drilling Into Sealed Frames of Agricultural Equipment. Cincinnati, Ohio: Department of Health and Human Services, Center for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 98-146. *(23,079 distributed; 11,730 requested)*

NIOSH Technology News Bulletin No. 473. The Explosion Hazard from Hydrogen Gas Generation Inside Sealed Frames.

Fatality Investigation Reports (included in first TI crane mailing)

Iowa FACE [2003]. FACE IA 03-101: Workers Dies When Tower Crane and Water Tank Crash to the Ground-Iowa. Morgantown, WV: U.S. Department of

Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.

NIOSH [2000]. FACE 2000-12: Carpenter Dies After Being Struck by Uncontrolled Concrete Bucket When Crane Tips Over-Ohio Morgantown, WV: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.

NIOSH [1999]. FACE 1999-11: Three Ironworkers Die After Heavy-Lift Crane Tips Over-Wisconsin. Morgantown, WV: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.

NIOSH [1997]. FACE 97-03: Mechanic Fatally Injured During Dismantling of Crane Boom at Scrap Metal Yard-Pennsylvania. Morgantown, WV: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.

Fatality Investigation Reports (included in forklift mailing)

Indiana FACE [2003]. 96IN06601: Yard Worker Dies After Forklift Dropped a Unit of Wafer Board on Him While He Was Stacking and Straightening Lumber-Indiana. Morgantown, WV: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.

NIOSH [2000]. FACE 2000-09: Sixteen-Year-Old Laborer At a Building Supply Center Crushed by Forklift that Tipped Over-Ohio. Morgantown, WV: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.

NIOSH [2000]. FACE 2000-22: Seventeen-Year-Old Laborer at Salvage Lumber Operation Crushed by Forklift That Tipped Over-New York. Morgantown, WV: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.

NIOSH Machine-related Fatality Investigation Reports (since 1994)

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|-------|---|
| 94-06 | Extrusion Machine Operator Dies of Head Injuries Received When His Head Became Caught in Extrusion Machine Rollers—South Carolina |
| 94-20 | Cleanup Person at Veneer Factory Killed When Cutoff Saw Inadvertently Activated—Virginia |
| 95-01 | Ironworker Foreman Dies After Falling 24 Feet From A Forklift—Tennessee |
| 95-02 | Mill Operator Dies From Injuries Received After His Upper Torso Was Caught Between Lamination Rollers—Tennessee |
| 95-10 | Tree Trimmer Dies After Being Run Over by Aerial Bucket Truck—Virginia |
| 95-11 | Sanitation Worker Run Over at Solid Waste Transfer Station—Virginia |
| 95-12 | Laborer Fatally Injured While Cleaning Concrete Mixer – Tennessee |
| 95-13 | Shift Supervisor Dies From Injuries Received After His Arms Were Caught Between Two Paper Machine Rollers—Tennessee |
| 95-14 | Machine Operator Fatally Injured When Struck by the Elevator of a Concrete Block Cuber Machine—Tennessee |
| 95-20 | Assistant Manager Dies After 15-Foot Fall From Forklift-Suspended Pallet--South Carolina |
| 96-02 | Sanitation Worker Dies After Being Caught In Chiller At Poultry Processing Plant—South Carolina |
| 96-03 | Trash Collector Dies After Being Caught In Compactor of Refuse Vehicle--North Carolina |
| 96-04 | Press Operator Dies After Forklift Rams Scrap Bin—North Carolina |
| 96-11 | Welder Dies After Being Struck By A Three-Ton Steel Roof Truss—South Carolina |
| 96-18 | Supervisor Dies As A Result Of Injuries Sustained In Fall with Powered Vertical Lift Aerial Platform—Virginia |
| 96-23 | Recycling Center Laborer Crushed In Baling Machine—Tennessee |
| 96-24 | Steel Rack Installer Dies After Being Struck By 3,000 Pound Bundle of Rack End Pieces—South Carolina |
| 97-01 | Company President Killed When Forklift Overturns—North Carolina |
| 97-07 | Order Picker Dies After Falling From a Lift Truck-Suspended Pallet--North Carolina |
| 97-12 | Tree Trimmer Dies After 40-Foot Fall in Aerial Bucket--Virginia |
| 97-14 | Maintenance Worker Dies After Overhead Crane Collides With Aerial Platform At Construction Equipment Plant - North Carolina |

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| 97-15 | Laborer Dies After Falling Into Baler at Paper Products Plant—South Carolina |
| 97-17 | Maintenance Electrician Dies From Crush Injuries When Caught Between Nip Barrier and Upper Frame of Paper Rewinder—Virginia |
| 97-19 | Electric Line Technician Dies After Falling From Forklift—North Carolina |
| 97-20 | Laborer Dies When Caught Between Boom Linkage Of Skid-Steer Loading Machine—North Carolina |
| 98-10 | Temporary Laborer Crushed by Dump Truck at Landfill -- South Carolina |
| 98-14 | Machine Operator Dies After Being Crushed by 9,700-Pound Coil Cart—Pennsylvania |
| 2000-01 | Worker Dies From Crushing Injuries After Falling Into a Baling Machine—North Carolina |
| 2000-12 | Carpenter Dies After Being Struck by Uncontrolled Concrete Bucket When Crane Tips Over - Ohio |
| 2000-15 | A Plant Production Supervisor Dies After Being Crushed Between the Boom Arm and Front Chassis of a Skid-Steer Loader—North Carolina |
| 2000-19 | Sixteen-Year-Old Produce-Market Worker Dies From Crushing Injuries After Being Caught in a Vertical Downstroke Baler—New York |
| 2000-22 | Seventeen-Year-Old Laborer at Salvage Lumber Operation Crushed by Forklift That Tipped Over—New York |
| 2001-03 | 38-year-old Stevedore Fatally Injured After Being Struck by the Boom of the Mobile Crane on Site |
| 2002-02 | Seventeen-Year-Old Warehouse Laborer Dies After the Forklift He Was Operating Tipped Over and Crushed Him—Arizona |
| 2002-04 | Plumber Dies After Being Crushed Between a Tandem Scissors Lift Platform and the I-Beam Frame of a Mobile Home—Tennessee |
| 2002-05 | Maintenance Mechanic Dies After Being Trapped in the Pneumatic Door of a Vacuum Cooler - South Carolina |
| 2002-09 | Hispanic Forklift Operator Dies After Being Caught Between Mast and Cage of Forklift - North Carolina |
| 2003-13 | 18-year-old Dies After Being Entangled in a Portable Mortar Mixer—South Carolina |
| 2004-01 | Hispanic Laborer Dies After Being Crushed Between the Frame of a Skid Steer Loader and the Scraper Attachment on the Loader Lift Arms—Ohio |
| 2004-03 | Seventeen-Year-Old High School Student Working as a Warehouse Laborer in Work-Based Learning Program Dies After Forklift Tips Over |

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| | and Crushes Him—Tennessee |
| 2005-05 | Hispanic Youth Dies in Densifier at a Plastics Recycling Plant—Tennessee |
| 2005-09 | Worker Killed While Operating a Rock Driller—Tennessee |
| 2006-01 | Hispanic Construction Workers Dies After Being Struck By Crane Boom Being Disassembled—North Carolina |
| 2006-02 | Sawmill Worker Killed in Debarker--South Carolina |
| 2006-05 | Bulldozer Operator Dies From Burns After a Hydraulic Line Bursts--Tennessee |

5. Reduce acute back injury

Sub goal 5.1: Reduce acute injuries caused by **patient handling**

Supporting Evidence:

Journal Articles

Nelson AL, Collins, JW, Knibbe H, Cookson K, deCastro AB, Whipple KL, Hudson A [In press]. Myths and Facts about policies for safe patient handling. *Nursing Management*.

Nelson AL, Collins JW, Siddharthan K, Matz M, and Waters T [In press] Link between safe handling and patient outcomes in long-term care. *Rehabilitation Nursing*.

Waters T, Collins JW, Galinsky T, Caruso C [2006]. NIOSH research efforts to prevent musculoskeletal disorders in the healthcare industry, *Orthopaedic Nursing* 25(6): 1-11.

Collins JW, Wolf L, Bell J, Evanoff B [2004]. An evaluation of a "best practices" musculoskeletal injury prevention program in nursing homes, *Injury Prevention* (10):206-211. (10 Citations)

Zhuang Z, Stobbe TJ, Collins JW, Hsiao H, Hobbs G [2000]. Psychophysical assessment of assistive devices for transferring patients/residents. *Applied Ergonomics* 31:35-44. (10 Citations)

Zhuang Z, Stobbe TJ, Hsiao H, Collins JW, Hobbs G [1999]. Biomechanical evaluation of assistive devices for transferring residents. *Applied Ergonomics* 30:285-94.

Zhuang Z, Stobbe TJ, Hsiao H, Collins JW, Hobbs GR [1999]. Biomechanical evaluation of assistive devices for transferring residents. *Applied Ergonomics* 30(4):285-294. (17 Citations)

Collins JW, Owen BD [1996]. NIOSH research initiatives to prevent back injuries to nursing assistants, aides and orderlies in nursing homes. *American Journal of Industrial Medicine* 29(4):421-424. (17 Citations)

Hersey JC, Collins JW, Gerson R, et al. [1996]. Methodologic issues in intervention research—health care. *American Journal of Industrial Medicine* 29(4):412-417, Apr. (2 Citations)

Jensen RC [1987]. Disabling back injuries among nursing personnel: Research needs and justification. *Research in Nursing and Health*, 10(1):29-38.

NIOSH Publications

Collins JW, Nelson A, and Sublet [2006]. Safe lifting and movement of nursing home residents, DHHS (NIOSH) Publication No. 2006-117. Cincinnati, OH: National Institute for Occupational Safety and Health. (22,950 distributed; 8,361 requested)

Conference Papers and Presentations

Collins, JW [May 2005]. Briefing on Capital Hill on Safe Patient Lifting. Seventy-three people attended the Congressional briefing on Pathways to Safety and Quality in Nursing. Of the total, 42 attendees were congressional staff—38 from the House of Representatives and four from the Senate.

Collins, JW [March and November, 2003, 2004, 2005, & 2006]. Evaluation of a Best Practices Back Injury Prevention Program in Nursing Homes. Graduate course lecture, Johns Hopkins University, School of Public Health.

Collins JW [2002-2007], Graduate student lecture on safe patient lifting among health care workers. West Virginia University, School of Medicine. March 2002-2007

Collins JW [2006]. NIOSH and International Research on Safe Patient Lifting Programs. 2006 Safe Patient Handling & Movement Conference. February 2006.

Collins JW [2002-2005]. Presentations on NIOSH's latest research were presented each year at the Annual Safe Patient Handling and Movement Conference. Conference is co-sponsored by NIOSH and the Veteran's Health Administration. March 2002-2005.

Collins JW [2004]. NIOSH Research to Prevent Injuries in Health Care Workers. USPHS Professional Conference. May 2004.

Collins JW [2002]. Evaluation of a Best Practices Back Injury Prevention Program in Nursing Homes. Best Practices in Occupational Safety and Health, Education, Training, and Communication: Ideas that Sizzle Conference, Baltimore, Maryland. October 2002

Collins JW [2001]. Intervention Program for Transferring Residents in Nursing Homes. 2001 National Occupational Research Agenda Symposium, Washington, DC, June 26-27, 2001.

Collins JW [2000]. Improved Methods for Lifting and Transferring Residents in Nursing Homes. Public Health Professional Conference sponsored by the Commissioned Officers Association of USPHS, Scottsdale, Arizona, June 7-10, 2000.

Collins JW [1999]. NIOSH Research Initiatives to Prevent Back Injuries Among Nursing Personnel. Nursing Council Workshop sponsored by the Service Employees International Union, Pittsburgh, Pennsylvania. December 1999.

Collins JW [1993]. NIOSH Research Initiatives to Reduce Back Injuries Among Nursing Personnel. Federation of Nurses and Health Professionals Annual Meeting, Washington D.C. March 1993.

Jensen RC [1985]. *Events that trigger disabling back pain among nurses*, in Proceedings of the Human Factors Society 29th Annual Meeting, Human Factors Society, Santa Monica, California, 799-801.

Jensen RC [1986]. *Work-related back injuries among nursing personnel in New York*. In Proceedings of the Human Factors Society 30th Annual Meeting. Human Factors Society, Santa Monica, California, 244-248.

Jensen RC [1986]. *Disabling back pain among nursing personnel in North Carolina. Living with Change and Choice in Health*. 337-340.

Reports from TI Supported Extramural Research (not an exhaustive list):

Owen BD, Garg A [1989]. Patient handling tasks perceived to be the most stressful by nursing assistants. In: Mital, A. [Eds.], Trends in Ergonomics/Human Factors IV. North-Holland, Amsterdam, pp. 831-838.

Garg A, Owen BD, Beller D, Banaag J [1991]. A biomechanical and ergonomic evaluation of patient transferring tasks: bed to wheelchair and wheelchair to bed. *Ergonomics* 34:289-312.

Garg A, Owen B, Carlson B [1992]. An ergonomic evaluation of nursing assistants' job in a nursing home. *Ergonomics* 35:979-95.

Garg A, Owen B [1992]. Reducing back stress to nursing personnel: an ergonomic intervention in a nursing home. *Ergonomics* 35:1353-75.

Other Publications

Collins JW, Menzel NN [2006]. Chapter 1: Scope of the problem – Moving and handling patients: A core function of Nurses. In *Safe Patient Handling and Movement - A practical guide for health care providers*. Audrey Nelson, ed., Springer Publishing Company, Inc. pp. 3-26.

Collins JW [2006]. Chapter 10 – Safe Lifting Policies. In *Safe Patient Handling and Movement - A practical guide for health care providers*. Audrey Nelson, ed., Springer Publishing Company, Inc. pp. 151-9, and 214-5.

The Safe Patient Handling and Movement (SPH&M) training presentation. Available online at: <http://www.cdc.gov/niosh/review/public/safe-patient/introduction.html>. Last accessed: February 21, 2007.

Jensen RC, Myers AH, Nestor D, Rattiner J [1987]. Low Back Injuries among Nursing Personnel: An Annotated Bibliography. Published by Johns Hopkins University Injury Prevention Center, Baltimore, MD.

Sub goal 5.2: Reduce acute injuries caused by **material handling**

Supporting Evidence:

Journal Articles

Giorcelli R, Hughes R, Myers J [2004]. Accuracy of a System for Measuring Three Dimensional Torso Kinematics during Manual Materials Handling, *Journal of Applied Biomechanics* 20(2):185-194.

Johnston JM, Landsittel DP, Nelson NA, Gardner LI, Wassell JT [2003]. Stressful psychosocial work environment increases risk for back pain among retail material handlers, *American Journal of Industrial Medicine* 43(2):179-187. (4 Citations)

Bobick TG, Belard J-L, Hsiao H, Wassell JT [2001]. Physiological effects of back belt wearing during asymmetric lifting, *Applied Ergonomics* 32(2001):541-547. (3 Citations)

Giorcelli RJ, Hughes RE, Wassell JT, Hsiao H [2001]. The effect of wearing a back belt on spine kinematics during asymmetric lifting of large and small boxes, *Spine* 26(16):1794-1798. (4 Citations)

Wassell JT, Gardner LI, Landsittel DP [2001]. A Study of Back Belts to Prevent Back Pain and Injury, *Injury Insights Newsletter*, June 2001 (June):1-2.

Wassell JT, Gardner LI, Landsittel DP, Johnston JJ, Johnston JM [2000]. A prospective study of back belts for prevention of back pain and injury, *Journal of the American Medical Association* 284(21):2727-2732. (20 Citations)
[This article won the Alice Hamilton Award for Excellence in Occupational Safety and Health, April 25, 2001, and was nominated for both the 2001 Charles C. Shepard Science Award for excellence in science at CDC and ATSDR and the CDC/ATSDR Statistical Science Award. The study had extensive press coverage through an Associated Press article that appeared in about 400 newspapers nationally and a video news release. In addition, CBS Evening News' covered the back belt study on Dec. 5 2000 including an interview with Acting NIOSH Director, Dr. Larry Fine.]

Landsittel DP, Gardner LI, Arena VC [1998]. Identifying populations at high risk for occupational back injury with neural networks, *Human and Ecological Risk Assessment* 4(6):1337-1352.

Gardner LI, Landsittel DP, Nelson NA [1999]. Risk factors for back injury in 31,076 retail merchandise store workers, *American Journal of Epidemiology* 150(8):825-833. (10 Citations)

Wassell JT, Gardner LI, Landsittel [2001]. Does back belt use prevent on-the-job back pain and injury? *Injury Insights* 2001(June/July):1.

Wassell JT, Landsittel DP, Gardner LI, Johnston JM [2001]. Do Back Belts Prevent Back Injury? In reply to letters to the editor. *Journal of the American Medical Association* 285(9):1152.

Wassell JT [2003]. Studies on Back Belts in the Workplace, *Salud (i) (SIIC) (i)Ciencia-Voice of the Sociedad Iberoamericana de Informacion Cientifica (SIIC)*, March 3, 2003.

Zhuang Z, Stobbe TJ, Hsiao H, Collins JW, Hobbs GR [1999]. Biomechanical evaluation of assistive devices for transferring residents. *Applied Ergonomics* 30(4):285-294. (17 Citations)

Gardner LI, Sweeney MH, Waters TR, Fine LJ [1997]. Distinguishing back-belt effects from other factors in reduction of back injuries (letter to editor). *International Journal of Occupational and Environmental Health* 3(3):236-239. (3 Citations)

Conference Papers and Presentations

Wassell JT [2006]. A Prospective Study of Back Belts for Prevention of Back Pain and Injury (and a review of more recent related studies on back belts). Invited Seminar Presentation, Occupational Medicine Grand Rounds, West Virginia University, Morgantown, WV, August 15, 2006.

Wassell JT. [2004]. The National Institute for Occupational Safety and Health Back Belt Study: A Prospective Study of Back Belts for Prevention of Back Pain

and Injury. Invited Seminar Presentation. Texas Medical Association, Austin, TX. May 15, 2004.

Wassell JT, Hendricks SA [2003]. Intensity and Binomial Risk Models for Injury Count Data. and. Oral Presentation at the 2003 CDC/ATSDR Symposium on Statistical Methods, Atlanta, GA, January 29, 2003.

Wassell JT [2002]. Causal Analysis of Back Belts to Prevent Low Back Pain. Oral Presentation at the 2002 meeting of the American Statistical Association, New York City, New York, August 14, 2002.

Wassell JT [2002]. Causal Analysis of Back Belts to Prevent Low Back Pain. 2002 *Proceedings of the American Statistical Association, Section on Statistics in Epidemiology* [CD-ROM], Alexandria, VA: American Statistical Association.

Wassell JT [2001] .A Prospective Study of Back Belts for Prevention of Back Pain and Injury. Invited Seminar Presentation. Agency for Health Care Quality Research, Rockville, MD, October 5, 2001.

Wassell JT [2001]. A Prospective Study of Back Belts for Prevention of Back Pain and Injury in Material Handlers. Invited Seminar Presentation. Rice University, Department of Statistics, Houston, TX, April 23, 2001.

Wassell JT [2001]. A Prospective Study of Back Belts for Prevention of Back Pain and Injury in Material Handlers. Invited Seminar Presentation. Department of Occupational and Environmental Health, The University of Iowa, Iowa City, Iowa, March 6, 2001.

Wassell JT, Gardner LI, Landsittel DP, Johnston JJ, Johnston JM [2001]. A Prospective Study of Back Belts for Prevention of Back Pain and Injury. Poster presentation at the National Occupational Research Agenda (NORA) Symposium, June 27, 2001, Washington, D.C.

Wassell JT [2000]. A Prospective Study of Back Belts for Prevention of Back Pain and Injury in Material Handlers. Presentation of Study Results to Dr. Jeff Koplan, Director, Centers for Disease Control and Prevention (NIOSH Program Review). NIOSH, Pittsburgh Research Laboratory, Bruceton, PA, March 16, 2000.

Wassell JT [2000]. A Prospective Study of Back Belts for Prevention of Back Pain and Injury in Material Handlers. Three Invited Presentations: *Interim* Analysis Results on December 17, 1997 and *Final* Study Results on February 3, 2000 and December 21, 2000; Presentations to Risk Control and Loss Prevention Directors and Management Staff at Wal-Mart Headquarters, Bentonville, AR.

Wassell JT [1999]. A Longitudinal Study of Injuries in Retail Workers. Invited Presentation. National Safety Council, New Orleans, LA, October 18, 1999.

Gardner LI, Wassell JT, Johnston JJ, Johnston JM, Landsittel DP [1999]. A Longitudinal Study of Back Belt Efficacy in Retail Workers. Presented at the 1999 American Public Health Association Meeting, Chicago, IL, November 9, 1999.

Hsiao H, Giorelli R, Bobick T, Belard J-L, Hughes R, Wassell, J. [1999]. Laboratory Study of Back Support Belts: Biomechanical and Physiological Evaluation. Presented at the 1999 American Public Health Association Meeting, Chicago, IL, November 9, 1999.

Gardner LI, Collins JW, Johnston JJ, Wassell JT [1997]. Efficacy of Back Belts for Prevention of Back Injuries in Material Handling Workers. Presented at the 4th Annual Conference for Managing Ergonomics in the 1990s, Cincinnati, Ohio, June 17-20, 1997. *Proceedings of Managing Ergonomics in the 1990's: A Discussion of Science and Policy Issues*. Published on the Internet at: <http://www.ergoweb.com/resources/reference/manergo/gardner.cfm>

Gardner LI, Collins JW, Johnston JJ, Wassell JT [1997]. Efficacy of back belts for prevention of back injuries in material handling workers. Presented and published in the proceedings of the 4th Annual Conference for Managing Ergonomics in the 1990's: A Discussion of Science and Policy Issues, Cincinnati, OH, June 17-20, 1997.

6. Reduce injuries and fatalities among workers in Alaska

Sub goal 6.1: Reduce injuries and fatalities in commercial fishing

Supporting Evidence:

Journal Articles

Lincoln JM, Perkins R, Melton F, Conway GA [1996]. Drowning in Alaskan waters. *Public Health Reports 111*(6):531-535. (5 Citations)

Conway GA, Lincoln JM [1996]. Preventing deaths in Alaska's fishing industry (Editorial). *Public Health Reports 110*(6):700. (4 Citations)

Lincoln JM, Conway GA [1999]. Preventing commercial fishing deaths in Alaska. *Occupational and Environmental Medicine 56*(10):691-695.

Conference Papers and Presentations

Conway GA, Lincoln JM, Jorgensen, Klatt ML, Manwaring JC [1998]. Preventing drownings in Alaska's commercial fishing industry. Proceedings of the

Tenth International Congress on Circumpolar Health, Anchorage, AK, September, 1998.

Husberg BJ, Lincoln JM, Conway GA [2001]. On-Deck Dangers in the Alaskan Commercial Fishing Industry, Marine Safety Council, Proceedings 58(2): pp. 23-24.

Husberg BJ [2002]. Surveillance for Nonfatal Work-Related Injuries in the Alaska Fishing Industry. In: Proceedings of the International Fishing Industry Safety and Health Conference, Cincinnati, OH: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health. DHHS (NIOSH) Publication No. 2003-102.

Lincoln JM, Husberg BJ, Conway GA [2002]. Improving Safety in the Alaskan Commercial Fishing Industry. In: Proceedings of the International Fishing Industry Safety and Health Conference, Cincinnati, OH: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2003-102.

Husberg BJ, Lincoln JM [2003]. Making Alaska's Fishing Industry Safer: applied Epidemiology and Engineering [Abstract] In: National Occupational Injury Research Symposium 2003, October 28-30, 2003, Pittsburgh, PA: <http://www.cdc.gov/niosh/noirs/noirsmain.html>.

NIOSH Publications

NIOSH [2003]. Proceedings of the International Fishing Industry Safety and Health Conference, 2002 Cincinnati, OH: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2003-102.

NIOSH [2005]. Dangers of Entanglement during Lobstering. [Workplace Solutions] By: Backus A; Smith T; Brochu P Lincoln J, Cincinnati, OH: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2005-137.

Workshops, Conferences, and Meetings

FISH (1992). Objectives of the first commercial fishing conference organized and co-sponsored by TI-AFS—the first Fishing Industry Safety and Health (FISH) Workshop held in Anchorage in 1992—were to raise consciousness, build coalitions, disseminate information, and encourage action to prevent injury and disease in fishing. There were 77 people in attendance from Alaska and the U.S. west coast. All papers presented at the conference were included in a proceedings volume and disseminated.

FISH II (1997). AFS sponsored and organized a second workshop—Fishing Industry Safety and Health II (FISH II)—in Seattle in 1997. By identifying the most hazardous areas requiring immediate attention, findings published in the CIB provided the scientific basis for the workshop. The primary workshop goal was to describe current circumstances and plan the next steps to ensure that fishermen have relatively safe workplaces. Working groups discussed prevention of vessel-related fatalities, man overboard fatalities, diving fatalities, and non-fatal work-related injuries in the industry. Each of these working groups developed recommendations that were published in the conference proceedings, which includes 28 of the 40 presentations given at the Workshop.⁷ The range of subjects was broad, from risk factor analyses to intervention approaches, some rooted in practicalities and success, some more theoretical.

IFISH (2000). In 2000, TI-AFS and the Harvard University School of Public Health (SPH) partnered to organize the First International Fishing Industry Safety and Health (IFISH) Workshop in Woods Hole, Massachusetts. This October 2000 conference, designed to discuss issues in fishing safety on an international scale, was attended by more than 100 fishermen and safety professionals from 13 different countries. Topics covered included a summary of worldwide problems and challenges in the industry, innovative approaches to investigating and preventing fishing vessel casualties, risk perception, intervention programs, surveillance, and unique approaches to safety training.

IFISH II (2003). NIOSH partnered with AMSEA to convene and facilitate the IFISH II conference in Sitka, Alaska in September 2003. There were 135 registrants from 18 nations. Forty speakers addressed topics ranging from deck safety needs for crabbers working in northern waters to policy changes affecting Pacific Island States. Seven speakers provided overviews of commercial fishing safety programs in developing countries including Tonga, Sri Lanka, Pakistan, India, Senegal, and Chile. The proceedings volume includes manuscripts submitted for 28 of the 40 presentations.

IFISH III (2006). Most recently in early 2006, NIOSH co-sponsored IFISH III in Chennai, India in partnership with the Bay of Bengal program and the Food and Agriculture Organization of the United Nations. The conference was attended by representatives from 16 nations, and focused on small-scale artisan fishermen and unique safety concerns for this group of workers.

*Sub goal 6.2: Reduce injuries and fatalities in **helicopter logging** operations*

Supporting Evidence:

Conference Papers and Presentations

NIOSH [1996]. Proceedings of the Helicopter Logging Safety Workshop, Ketchikan, AK, March 1-2, 1995, Klatt ML, Hudson D, Conway GA, Eds. 128 pages.

Manwaring J [1996]. Synthesis of NTSB aircraft accident data involving helicopter external load operations in the United States and Alaska, 1980-1994. in Proceedings of the Helicopter Logging Safety Workshop, Ketchikan, AK, March 1-2, 1995, Klatt ML, Hudson D, Conway GA, Eds.

Conway GA [1996]. Epidemiology of Alaska Helicopter Logging Deaths, in Proceedings of the Helicopter Logging Safety Workshop, Ketchikan, AK, March 1-2, 1995, Klatt ML, Hudson D, Conway GA, Eds..

Conway GA, Klatt ML, Manwaring JC [1998]. Effective injury prevention using surveillance data: Helicopter logging, Alaska, 1992-1995 in Proceedings of the Tenth International Congress on Circumpolar Health, Anchorage, AK, September, 1998.

Sub goal 6.3: Reduce injuries and fatalities in Alaska aviation

Journal Articles

CDC [1997]. Work-related aviation fatalities, Alaska, 1990-1994. *Morbidity and Mortality Weekly Report* 46(22):496-498.

Garrett LC, Conway GA, Manwaring JC [1998]. Epidemiology of work-related aviation fatalities in Alaska, 1990-94. *Aviation, Space and Environmental Medicine* 69(12):1131-1136. (4 Citations)

Husberg BJ, Conway GA, Moore MA, Johnson MS [1998]. Surveillance for nonfatal work-related injuries in Alaska, 1991-95. *American Journal of Industrial Medicine* 34(5):493-498. (14 Citations)

Conway GA, Lincoln JM, Husberg BJ, Manwaring JC, Klatt ML, Thomas TK [1999]. Alaska's model program for surveillance and prevention of occupational injury deaths, *Public Health Reports* 114(6):550-558.

Thomas TK, Bensyl DM, Manwaring JC, Conway GA [2000]. Controlled flight into terrain accidents in commuter and air taxi operators in Alaska. *Aviation, Space and Environmental Medicine* 71(11):1098-1103. (4 Citations)

CDC [2002]. Factors Associated with Pilot Fatalities in Work-Related Aircraft Crashes - Alaska 1990-1999, *MMWR* 50(11):347-349.

Conway GA, Hill A, Martin S, Mode NA, Berman MD, Bensyl DM, Manwaring JC, Moran KA [2004]. Alaska air carrier operator and pilot safety practices and attitudes: a statewide survey. *Aviation, Space and Environmental Medicine* 75(11):984-991. (1 Citation)

Conway GA, Mode NA, Berman MD, Martin S, Hill A [2005]. Flight safety in Alaska: Comparing attitudes and practices of high and low-risk air carriers,

Aviation, Space and Environmental Medicine 76(1):52-57.

Husberg BJ, Fosbroke DE, Conway GA, Mode NA [2005]. Hospitalized Nonfatal Injuries in the Alaskan Construction Industry. *American Journal of Industrial Medicine* (47):428-433.

NIOSH Publications

Conway GA, Lincoln JM, Hudson DS, Bensyl DM, Husberg BJ, Manwaring JC [2002]. Surveillance and Prevention of Occupational Injuries in Alaska: A Decade of Progress 1990-1999, Cincinnati, OH: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2002-115. (3,176 distributed; 1,541 requested)

Conference Papers and Presentations

Garrett LG, Conway GA [1998]. Aviation: a serious occupational hazard--Alaska, 1990-1995, in Proceedings of the Tenth International Congress on Circumpolar Health, Anchorage, AK, September, 1998.

Conway GA, Manwaring J [2003]. Surveys of Alaska's Aviation Industry [Abstract] In: National Occupational Injury Research Symposium 2003, October 28-30, 2003, Pittsburgh, PA: <http://www.cdc.gov/niosh/noirs/noirsmain.html>.

Manwaring J, Conway GA, Moran K [2003]. Progress in Partnerships for Surveillance and Prevention of Occupational Aircraft Crashes in Alaska 1990-1999 [Abstract] In: National Occupational Injury Research Symposium 2003, October 28-30, 2003, Pittsburgh, PA: <http://www.cdc.gov/niosh/noirs/noirsmain.html>.

Moran KA, Conway GA, Bensyl D [2003]. Human Errors as a Leading Cause of Occupant Mortality in Air Taxi and Commuter Crashes in Alaska 1990-1999 [Abstract] In: National Occupational Injury Research Symposium 2003, October 28-30, 2003, Pittsburgh, PA: <http://www.cdc.gov/niosh/noirs/noirsmain.html>.

Conway G, Martin S, Berman M, Hill A, Bensyl D, Manwaring J, Moran K [2004]. Risk factors for air transportation safety among air carrier operators and pilots in Alaska: A major survey and case-control analysis [Abstract] In: The 7th World Conference on Injury Prevention and Safety Promotion, Vienna, Austria, June 6th-9th 2004. Vienna, Austria, Vienna Austria: Kuratorium fur Schutz und Sicherheit/Institut Sicher Leben, NN: 20025703.

Garrett LG, Conway GA [1998]. Moose-Auto collisions, Anchorage, Alaska, 1990-1995. Proceedings of the Tenth International Congress on Circumpolar Health, Anchorage, AK, September, 1998.

Conway G, Moran K [2004]. Scientific worker and licensed professional deaths in Alaska, 1990-2002 [Abstract] In: The 7th World Conference on Injury Prevention and Safety Promotion, Vienna, Austria, June 6th-9th 2004. Vienna,

Austria, Vienna, Austria: Kuratorium fur Schutz und Sicherheit/Institut Sicher Leben, NN: 20025707.

Hudson D, Hunt A, Conway G, Ekman R [2004]. Cold-related injuries in Alaska, 1991-1999 [Abstract] In: The 7th World Conference on Injury Prevention and Safety Promotion, Vienna, Austria, June 6th-9th 2004. Vienna, Austria, Vienna Austria: Kuratorium fur Schutz und Sicherheit/Institut Sicher Leben, NN: 20025706.

Other Publications

Bledsoe GL, Klatt MK, Lincoln JM [1996]. Occupational fatalities in Alaska—1995. State of Alaska Epidemiology Bulletin No. 10.

7. Reduce injuries and fatalities among Emergency Responders

Subgoal 7.1: Reduce injuries and fatalities to **fire fighters**

Supporting Evidence:

Journal Articles

Washenitz F, Stoltzfus J, Newton B, Kubinski L [2001]. Fire incidents involving regulators used in portable oxygen systems. *Injury Prevention* 7(Suppl I): i34-37.

Baldwin T N [2001]. Basement Fires: A Lethal Trap. *American Fire Journal*, May 2001, pp. 12-16.

McFall M [2001]. Roadway Assistance. *Fire Chief Magazine* 45(3):62-64

Hodous T, Washenitz F, Newton B [2002]. Occupational burns from oxygen resuscitator fires: The hazard of aluminum regulators. *American Journal of Industrial Medicine* 42(1): 63-69.

Fabio A, Ta M, Strotmeyer S, Li W, Schmidt E [2002]. Incident-level risk factors for firefighter injuries at structural fires. *Journal of Occupational and Environmental Medicine* 44(11):1059-1063.

Hales T, Boal WL, Ross CS [2002]. Hepatitis C virus (HCV) infection among public safety workers (PSW) (letter). *Journal of Occupational and Environmental Medicine* 44:221-4.

Proudfoot SL, Romano NT, Bobick TG, Moore PH [2003]. Ambulance Crash-Related Injuries among Emergency Medical Services Workers—United States, 1991 – 2002. *Morbidity and Mortality Weekly Report* 52(8). (February 28, 2003)

Hodous TK, Pizatella TJ, Braddee RW, Castillo DN [2004]. Fire fighter fatalities 1998-2001: overview with an emphasis on structure related traumatic fatalities. *Injury Prevention* 10(4): pp 222-226.

Boal WL, Hales T, Ross CS [2005]. Blood-borne pathogens among firefighters and emergency medical technicians. *Prehospital Emergency Care* 9(2):236-47.

Proudfoot SL [2005]. Ambulance Crashes: Fatality Factors for EMS Workers, *Emergency Medical Services* 34(6): June 2005.

NIOSH Publications

Braddee R, Washenitz F [1999]. NIOSH hazard ID: Fire fighting hazards during propane tank fires. Cincinnati, OH: Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 99-129. (51,117 distributed)

McFall M, Schmidt E [2001]. NIOSH hazard ID: Traffic hazards to fire fighters while working along roadways. Cincinnati, OH: Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2001-143. (71,193 distributed; 30,834 requested)

Romano N [2002]. NIOSH hazard ID: Fire fighter deaths from tanker truck rollovers. Cincinnati, OH: Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2002-111. (42,039 distributed; 2,595 requested)

Cortez K, Mezzanotte T [2002]. NIOSH hazard ID: Fire fighters exposed to electrical hazards during wildland fire operations. Cincinnati, OH: Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2002-112. (40,148 distributed; 1,090 requested)

Tarley J, Proudfoot S, Husting E [2004]. NIOSH Workplace Solutions: Divers beware: training dives present serious hazards to fire fighters. Cincinnati, OH: Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2004-152. (62,059 distributed; 5,234 requested)

Tarley J, Guglielmo C [2004]. NIOSH Workplace Solutions: Preventing deaths and injuries to fire fighters during live-fire training in acquired structures. Cincinnati, OH: Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2005-102. (37,498 distributed; 2,313 requested)

Pettit T, Merinar T, Commodore M, Ronk R. NIOSH Alert: Preventing Injuries and Deaths of Fire Fighters. Cincinnati, OH: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 94-125

Pettit T, Dunn V, Main G [1999]. NIOSH Alert: Request for assistance in preventing injuries and deaths of fire fighters due to structural collapse. Cincinnati, OH: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 99-146. (*71,040 distributed; 22,917 requested*)

Kisner S, Jenkins L. NIOSH ALERT: Preventing Worker Injuries and Deaths from Traffic-Related Motor Vehicle Crashes. Cincinnati, OH: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 98-142. (*128,500 distributed; 20,355 requested*)

Merinar TR, Braddee RW, Washenitz F, Mezzanotte T, Dunn V, Brannigan F [2005]. NIOSH Alert: Request for assistance in preventing injuries and deaths of fire fighters due to truss system failures. Cincinnati, OH: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2005-132. (*42,083 distributed*)

Food and Drug Administration, NIOSH [1999]. FDA/NIOSH Public Health Advisory: Explosions and fires in aluminum oxygen regulators. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, Food and Drug Administration, February 1999.

NIOSH, Federal Railroad Administration, Operation Lifesaver [2003]. Your safety 1st: Railroad crossing safety for emergency responders. Cincinnati, OH: Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2003-121. (*44,086 distributed; 39,209 requested*)

NIOSH [1997]. NIOSH fact sheet: Exploding flashlights: Are they a serious threat to worker safety? Cincinnati, OH: Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 97-149.

Mass Mailings

A mass mailing was completed in the 3rd quarter 2003 encompassing 30,000 fire departments containing the Publication "Your Safety 1st - Pub no. 2003-121.

A packet of six fire fighter reports (F2002-37 SD, F2002-06 NY, F2001-39 WV, F2001-38 NY, F2001-33 TX, and F2001-31 MI) were mailed in the 3rd quarter 2003.

Mass mailing was completed in the 4th quarter 2004 of the NIOSH Workplace Solutions document - Divers Beware: Training Dives Present Serious Hazards to Fire Fighters - Pub no. 2004-152.

Mass mailing was completed in the 3rd quarter of 2005 of the NIOSH Alert *Preventing Injuries and Deaths of Fire Fighters due to Truss System Failures*, publication number 2005-132.

Conference Papers and Presentations

Braddee RW [1998]. NIOSH's Fire Fighter Fatality Investigation and Prevention Program. Unpublished paper presented at the National Volunteer Fire Council, Warwick, RI, October 9, 1998.

Washenitz F [1999]. NIOSH's Fire Fighter Fatality Investigation and Prevention Program. Unpublished paper presented at the Baltimore Fire Safety Conference, Baltimore, MD, July 11, 1999.

Cortez K [1999]. NIOSH's Fire Fighter Fatality Investigation and Prevention Program. Unpublished paper presented at the Search and Rescue/Disaster Response World Conference and Exposition, Nashville, TN, August 1, 1999.

Braddee R [1999]. NIOSH's FFFIPP. Presented at the IAFF Redmond Conference, Honolulu, Hawaii, August 21-28, 1999.

Hales T [1999]. NIOSH's FFFIPP. Presented at the IAFF Redmond Conference, Honolulu, Hawaii, August 21-28, 1999.

Washenitz F [1999]. NIOSH's Fire Fighter Fatality Investigation and Prevention Program. Unpublished paper presented at the Safety and Environmental Management (SEM 334) class, West Virginia University, Morgantown, WV, September 9, 1999.

Braddee RW [1999]. NIOSH's Fire Fighter Fatality Investigation and Prevention Program. Unpublished paper presented at the Safety and Environmental Management (SEM 310) class, West Virginia University, Morgantown, West Virginia, September 21, 1999.

Cortez K [1999]. NIOSH's Fire Fighter Fatality Investigation and Prevention Program. Unpublished paper presented at the National Volunteer Fire Council Meeting, Memphis, TN, October 4, 1999.

Washenitz F [1999]. How the NIOSH Fire Fighter Investigation Team Conducts Fatality Investigations. Unpublished paper presented at the NFPA Fall Meeting, New Orleans, LA, November, 1999.

Hodous T [1999]. NIOSH's Fire Fighter Fatality Investigation and Prevention Program, an Overview. Unpublished paper presented at the National Institute for Standards and Technology Conference, Gaithersburg, MD, December, 1999.

Cortez K [2000]. NIOSH's Fire Fighter Fatality Investigation and Prevention Program and Fire Fighter Fatality Statistics. Unpublished paper presented at the Fire Department Instructors Conference, Indianapolis, IN. February, 2000.

Washenitz F [2000]. Fire Fighter Fatality Case Presentations. Unpublished paper presented at the Fire Department Instructors Conference, Indianapolis, IN, February, 2000.

McFall M [2000]. NIOSH's Fire Fighter Fatality Investigation and Prevention Program. Unpublished paper presented at the American Society of Safety Engineers, Pittsburgh, PA, February, 2000.

Braddee RW [2000]. NIOSH's Fire Fighter Fatality Investigation and Prevention Program. Unpublished paper presented at the Professional Fire Fighters of Massachusetts Annual Meeting, Springfield, MA, June 19, 2000.

Washenitz F [2000]. NIOSH's Fire Fighter Fatality Investigation and Prevention Program - Fatality Case Presentation. Unpublished paper presented at the Professional Fire Fighters of Massachusetts Annual Meeting, Springfield, MA, June 19, 2000.

Mezzanotte T [2000]. NIOSH's Fire Fighter Fatality Investigation and Prevention Program. Unpublished paper presented at the Firehouse Conference and Exposition, Baltimore, MD, July, 2000.

Washenitz F [2000]. Safety Hazards with Oxygen Systems. Unpublished paper presented at the Firehouse Conference and Exposition, Baltimore, MD, July, 2000.

Romano N [2000]. Motor Vehicle Incidents in the Fire Service. Unpublished paper presented at the International Association of Fire Chiefs Conference, Washington, DC, August, 2000.

Cortez K [2000]. Fire Fighter Fatality Investigation and Prevention Program. Unpublished paper presented at the Journal of Emergency Medicine Society Apparatus Maintenance Workshop, Ft. Worth, TX, August, 2000.

Braddee RW [2000]. NIOSH's Fire Fighter Fatality Investigation and Prevention Program. Unpublished paper presented at the Fire Service Leadership Convention, Fairfax, VA, October, 2000.

Washenitz F [2000]. Oxygen Regulator Flash Fires. Unpublished paper presented at the National Occupational Injury Research Symposium 2000, Pittsburgh, PA, October, 2000.

Braddee RW [2000]. Overview of the Fire Fighter Fatality Investigation and Prevention Program and Prevention Recommendations. Unpublished paper presented at the National Occupational Injury Research Symposium 2000, Pittsburgh, PA, October, 2000.

Myduc Ta [2000]. Traumatic Occupational Injury Fatalities to Fire Service Personnel, 1992-1998. Presented at the National Occupational Injury Research Symposiums 2000. Pittsburgh, Pennsylvania, October, 2000.

McFall M [2001]. Fire Fighter Injury Incident - F2000-43. Presented at the Delaware State Fire Chiefs Association, Newark, Delaware, March 22, 2001.

Pizatella T [2001]. Investigating and Preventing Fire Fighter Fatalities. Presented at the program briefing, Atlanta, Georgia, March 23, 2001.

Braddee R [2001]. Investigating and Preventing Fire Fighter Fatalities. Presented at the International Association of Fire Chiefs (West), Oklahoma City, Oklahoma, May 6, 2001.

Cortez K [2001]. NIOSH's Fire Fighter Program and Two Fatality Incidents. Presented at the National Volunteer Fire Council meeting, Wenatchee, Washington, April 20, 2001.

Romano N [2001]. NIOSH's Fire Fighter Fatality Investigation and Prevention Program. Presented at Firehouse Expo, Rockville, Maryland, July 2001.

Braddee R [2001]. Structure Fire Claims the Life of Three Career Fire Fighters and Three Children – Iowa. Presented at 16th Redmond Symposium, Phoenix, Arizona, September 2001.

Castillo D [2001]. NIOSH's Fire Fighter Fatality Investigation and Prevention Program's Investigation Database. Presented at the 16th Redmond Symposium, Phoenix, Arizona, September 2001.

McFall M [2001]. Restaurant Fire Claims the Life of Two Career Fire Fighters – Texas. Presented at the 16th Redmond Symposium, Phoenix, Arizona, September 2001.

Washenitz F [2001]. Restaurant Fire Claims the Life of Two Fire Fighters – Texas. Presented at the FRESH conference, Emmitsburg, Maryland, October 13, 2001.

Myduc Ta, M Strotmeyer [2001]. Characteristics of fire fighter line-of-duty motor vehicle-related fatal injury, 1992-1998. Presented at the 129th annual meeting of the American Public Health Association, Atlanta, GA, October 21-25, 2001.

Hodous T, Castillo D, Braddee R, Pizatella T. [2002]. NIOSH Fire Fighter Fatality Investigations 1998-2000: Overview with an Emphasis on Structure-related Fatalities. Presented at 6th World Conference: Injury Prevention and Control, May 14, 2002, Montreal, Canada.

Merinar T [2003]. Fatality cases involving roof and floor truss failures. Presented at the 17th Redmond Symposium, San Francisco, California, October 2003.

Tarley J [2003]. Live-fire Training case study. Presented at the 17th Redmond Symposium, San Francisco, California, October 2003.

Tarley J [2003]. Review of NIOSH Fire fighter Structure Fire Fatality – New York. Presented at the NOIRS conference, Pittsburgh, Pennsylvania, November 2003.

Powers J [2003]. Visibility: Which Way is Out? Presented at the NORIS conference, Pittsburgh, Pennsylvania, November 2003.

Bobick TG, Current RS, Romano NT, Green JD, Moore PH [2003]. Ambulance Crash-Related Injuries Among EMS Workers. Presented at NOIRS 2003, October 22-30.

McFall M, Lutz V [2004]. Case Studies of the NIOSH Fire Fighter Fatality Investigation Program. Presented at the annual conference of the Minnesota State Fire Chief's Association, Minneapolis, MN, October 21, 2004.

Bobick, TG, Lucien Brouha [2004]. Selection of Dependent Variables to Evaluate EMS Worker Activities in Ambulance Patient Compartments. Work Physiology Symposium, Keystone, Colorado. September 1-2, 2004.

Current RS [2004]. A Review of NIOSH Research to Support Ambulance Worker Safety. The National Truck Equipment Association's (NTEA), Ambulance Manufacturers Division (AMD) winter business meeting February 2004, Tampa, FL.

Green JD [2004]. Evaluation of Emergency Service Vehicle Occupant Safety. Presented at the National Association of State EMS Directors meeting, October 8, 2004.

Castillo DN [2005]. NIOSH Fire Fatality Investigation and Prevention Program. Overview and Experiences Relevant to a Near-miss Reporting System. Invited presentation at *National Fire Fighter Near-Miss Reporting System Task Force Meeting*, Reston, VA, March 7-8, 2005.

McFall M [2005]. NIOSH Fire Fighter Fatality Investigation and Prevention Program Overview and Case Studies. Presented at the *West Virginia Fireman's Association's Annual Safety Summit*, Weston, WV, April 2, 2005.

Koedam R, Farmer A [2005]. Risk vs. Gain: Considerations for Working Fires in Unoccupied Structures. Presentation at the NFPA World Safety Conference & Exposition, Las Vegas, NV, June 30, 2005.

Koedam R [2005]. Risk vs. Gain: Considerations for Working Fires in Unoccupied Structures. Presentation at the Firehouse Expo, Baltimore, MD, July 30, 2005.

Frederick, L [2005]. NIOSH Fire Fatality Investigation and Prevention Program. Presentation at the Firehouse Expo, Baltimore, MD, July 30, 2005.

Tarley J [2005]. "Live-Fire and Motor Vehicle Fatality Case Studies." Invited presentation at the Ohio State Fire Fighter Association Conference, Wilmington, OH, August 19-20, 2005.

Green JD, Moore PH, Current RS, Yannaccone J, Day D, Proudfoot SL, Bobick TG, Romano NT [2005]. Reducing Vehicle Crash-Related EMS Worker Injuries Through Improvements in Restraint Systems, in *Proceedings XVIIth World Safety Congress*, Orlando FL, September 20, 2005.

Frederick, L [2005]. Fire Fighter Fatalities due to Carbon Monoxide Poisoning. Presentation at the XVIIth World Congress on Safety and Health at Work, Orlando, Florida, September 18-22, 2005.

Castillo, DN [2005]. NIOSH Fire Fighter Fatality Investigation and Prevention Program. By invitation, presented at the Eighteenth Biennial Symposium on the Occupational Health and Hazards of the Fire Service, Honolulu, HI, October 26, 2005.

Moore, PH [2005]. Ambulance Crash Injuries Among EMS Workers. Presented at International Association of Fire Chiefs, Fire-Rescue Med 2005, April 20-22.

Proudfoot SL [2005]. Ambulance Safety in the Fire Service. Presented at 2005 NFPA World Safety Conference and Exposition, June 6-10.

Green JD [2005]. Reducing Vehicle Crash-Related EMS Worker Injuries Through Improvements in Restraint Systems. Poster presentation at Safety 2005, the American Society of Safety Engineers Annual Conference and Exposition, June 12-15.

Proudfoot SL [2006]. Ambulance Safety in the Fire Service. Fire Department Safety Officers Apparatus Symposium 2006, Las Vegas NV, January 2006.

Moore PH, Current RS, Green JD, Proudfoot SL, Bobick TG, Romano NT, Yannaconne J, Day D, Whitman G [2006]. Evaluation of Emergency Service Occupant Safety. NORA 2006, poster presentation, Washington, DC, May 9 - 10, 2006.

Hales T, Pizatella T [2005]. NIOSH Fire Fighter Fatality Investigation and Prevention Program. Presented at the NIOSH Fire Fighter Fatality Investigation and Prevention Program Stakeholders meeting, Washington DC, March 22, 2006.

Moore PH [2006]. Evaluation of Emergency Service Occupant Safety. EMS Care 2006, Linthicum Maryland, April 30, 2006.

Moore PH, Green JD [2006]. Evaluation of Emergency Service Occupant Safety. EMS Safety Net 2006, Atlanta Georgia, June 9, 2006.

Proudfoot SL, Moore PH [2006]. Ambulance Safety in the Fire Service, an Update. NFPA World Safety Conference & Exposition, Orlando Florida, June 4-8 2006.

Moore PH, Bobick TG, Current RS, [2006]. “National Institute for Occupational Safety and Health Research to Improve Ambulance Safety.” EMS Expo 2006 Las Vegas, Nevada, September 28, 2006.

Standards, Regulations

Text of Bradley’s Law: Introduced by Sens. MEIER, HOFFMANN, MALTESE, McGEE, MENDEZ, RATH, SEWARD, VOLKER, WRIGHT -- read twice and ordered printed, and when printed to be committed to the Committee on Finance

AN ACT to amend the executive law, in relation to the training of firefighters under live fire conditions. The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. The executive law is amended by adding a new section 159-c-1 to read as follows: 159-c-1. Training; live fire conditions.

1. In the training of fire-fighters under live fire conditions no person or persons shall play the role of a victim.
2. For purposes of this section, a live fire condition is any unconfined open flame or device that can propagate fire to a building, a training tower, an acquired structure or other combustible material.
3. A violation of this section shall be punishable by a civil penalty not to exceed one thousand dollars paid for by the fire department conducting such training.

§ 2. This act shall take effect immediately.

Anecdotal Feedback

Numerous examples of feedback regarding the use of the TI program's products have also been received, below are some examples:

Fire department member: *"I want to extend my thanks and appreciation for your professionalism conducting during the investigation and fact-finding process. ... Preventing and reducing fire fighter fatalities should be a top priority goal for every department, and to accept objective recommendations from beneficial sources and organizations such as yours. We are currently taking your recommendations to heart with the following actions already in process for completion....."*

Congressman James McGovern after release of NIOSH report 99-F47 based on a Massachusetts event resulting in the deaths of 6 fire fighters: *"The value of this report goes far beyond Worcester,"*

Deputy Fire Marshal, Colorado: *"I used the Firefighter Fatality reports published by your organization. These are invaluable as case studies to represent to our young rookies the true hazards of their job. These reports bring the aspect of safety into a reality for them. I know they are safe for having reaped the rewards from the hard work your staff puts into the reports. This is a great and invaluable service to my profession."*

Staff member from Training division of Ohio Fire Department: *"I would also like to express my department's appreciation in providing the NIOSH Firefighter, Death in the Line of Duty Reports. We recently printed dozens of the reports for the National Stand-down for Firefighter Safety for our firefighters to review.... The reports, on many occasions, hit close to home in regards to the similarities to our department. The reports stimulate changing an attitude of "it wouldn't happen here" to a attitude and belief that "it COULD happen here". I thank NIOSH for the countless lives they have saved. I believe the NIOSH reports are preventing deaths and serious injury by opening the eyes of those who are involved in the fire service."*

Information on reader response card to NIOSH publications: “*I find the NIOSH Reports and Alerts on fire fighter deaths very informative. We utilize the information to change attitudes.*”

Information on reader response card to NIOSH publications: “*Thank you very much. Very informative and easy to be used in our training program.*”

Sub goal 3.2: Improve protection for ***ambulance workers*** in patient compartments

Supporting Evidence:

Journal Articles

Proudfoot SL, Romano NT, Bobick TG, Moore PH [2003]. Ambulance Crash-Related Injuries among Emergency Medical Services Workers -- United States, 1991 - 2002. *Morbidity and Mortality Weekly Report* 52:8, February 28, 2003.

Proudfoot SL [2005]. Ambulance Crashes: Fatality Factors for EMS Workers. *Emergency Medical Services* 34:6. June 2005.

A draft manuscript, Ambulance Patient Compartment Safety – A Survey of Registered Emergency Medical Technicians, Proudfoot SL, Moore, PH, and Levine R, is currently under editorial review at the *Journal of Emergency Medical Services*.

Conference Papers and Presentations

Bobick TG, Current RS, Romano NT, Green JD, Moore PH [2003]. Ambulance Crash-Related Injuries among EMS Workers, presented at NOIRS 2003, October 22-30. NOIRS 2003, October 29, 2003.

Current RS [2004]. A Review of NIOSH Research to Support Ambulance Worker Safety, presented at the National Truck Equipment Association’s (NTEA), Ambulance Manufacturers Division (AMD) winter business meeting in Tampa, FL, February 2004.

Bobick TG [2004]. Selection of Dependent Variables to Evaluate EMS Worker Activities in Ambulance Patient Compartments, presented at the Lucien Brouha Work Physiology Symposium, Keystone, Colorado. September 1-2, 2004.

Green JD [2004]. Evaluation of Emergency Service Vehicle Occupant Safety, presented at the National Association of State EMS Directors meeting, October 8, 2004. (Where?)

Green JD, Moore PH, Current RS, Yannaccone J, Day D, Proudfoot SL, Bobick TG, Romano NT [2005]. Reducing Vehicle Crash-Related EMS Worker Injuries

through Improvements in Restraint Systems. in Proceedings of the XVIIth World Safety Congress, September 20, 2005 in Orlando, FL.

Moore PH [2005]. Ambulance Crash Injuries among EMS Workers, presented at International Association of Fire Chiefs, Fire-Rescue Med 2005, April 20-22, 2005 in Las Vegas, NV.

Proudfoot SL [2005]. Ambulance Safety in the Fire Service, presented at the 2005 NFPA World Safety Conference and Exposition, June 6-10, 2005 in Las Vegas, NV.

Green JD [2005]. Reducing Vehicle Crash-Related EMS Worker Injuries through Improvements in Restraint Systems, poster presentation at Safety 2005, the American Society of Safety Engineers Annual Conference and Exposition, June 12-15, 2005 in New Orleans, LA.

Proudfoot SL [2006]. Ambulance Safety in the Fire Service, Fire Department Safety Officers Apparatus Symposium 2006, Las Vegas, NV, January 2006.

Moore PH, Current RS, Green JD, Proudfoot SL, Bobick TG, Romano NT, Yannaconne J, Day D, Whitman G [2006]. Evaluation of Emergency Service Occupant Safety, poster presentation at the NORA 2006 Symposium, May 9 and 10, 2006 in Washington, DC.

Moore PH [2006]. Evaluation of Emergency Service Occupant Safety, EMS Care 2006, April 30, 2006 in Linthicum, MD.

Moore PH, Green JD [2006]. Evaluation of Emergency Service Occupant Safety, EMS Safety Net 2006, June 9, 2006 in Atlanta, GA.

Proudfoot SL, Moore PH [2006]. Ambulance Safety in the Fire Service an Update, NFPA World Safety Conference & Exposition, June 4-8 2006 in Orlando FL.

Moore PH, Current RS, Bobick TG [2006]. National Institute for Occupational Safety and Health Research to Improve Ambulance Safety, EMS Expo, September 25-29, 2006 in Las Vegas, NV.

Fatality Investigation Reports

NIOSH [2003]. Career Fire Fighter/Emergency Medical Technician Dies in Ambulance Crash, Texas. Report No. F2003-05 available at <http://www.cdc.gov/niosh/fire/>.

NIOSH [2003] Career Fire Fighter/Emergency Medical Technician Dies and Paramedic is Injured in a Three-Vehicle Collision – Nebraska, Report No. F2003-33, available at <http://www.cdc.gov/niosh/fire/>.

NIOSH [2005]. Career Fire Fighter/SMT Dies in Ambulance Crash— Florida, Report No. F2005-12, available at <http://www.cdc.gov/niosh/fire/>

FACE [2001]. 26 Year-Old Emergency Medical Technician Dies in Multiple Fatality Ambulance Crash – Kentucky, Report No. 2001-11, available at <http://www.cdc.gov/niosh/face/>

NIOSH [2001]. Emergency Medical Technician Dies in Ambulance Crash – New York, Report No. FACE 2001-12, available at <http://www.cdc.gov/niosh/face/>

Crash Investigation Reports

National Highway Traffic Administration crash reconstruction reports funded by NIOSH documenting environmental and vehicular circumstances and the injury mechanisms for patient compartment occupants present during an ambulance crash. The following reports are available at <http://www-nass.nhtsa.dot.gov>:

NHTSA CA02-028, 1999 Ford E-350 Super Duty Van Chassis W/Wheeled Coach Type III Ambulance Body, New Jersey, July 2002

NHTSA CA02-009, 2000 Ford E-350 Type III Ambulance, Kentucky, March 2002

NHTSA CA02-033, 1995 Ford E-350 Type III Ambulance, Minnesota, July 2002

NHTSA CA03-004, 1997 Ford E-350 Type III Ambulance, Kentucky, January 2003

NHTSA DS02-003, Wheeled Coach Moduvan Ambulance on a 1997 Ford E-350 Series Chassis, Washington, February 2002

TI Research Partners for the ambulance workers safety program Include:

U.S. and Canadian Private Sector Partners

ARRCA Incorporated (contractor, forensic engineering, crash survivability)

Schroth Safety Products Corp. (material and engineering support, occupant restraints)

H. Koch & Sons Co. (material and engineering support, occupant restraints)

Pacific Scientific (material support, occupant restraints)

Allied Services Systems (material and engineering support, occupant restraints)

Ferno-Washington, Inc. (material support, patient transport equipment)

PMG Technologies (contractor, automotive compliance and research testing, fully staffed test facility)

Dynamic Sciences Incorporated (contractor, vehicle crash reconstruction)

American Medical Response (EMS service provider, provided access to employee injury and compensation data)

EVS Ltd (ambulance seat manufacturer, provided engineering support)

Wheeled Coach, Collins Industries (GSA contract ambulance manufacturer)

CALSPAN Corporation (contractor, engineering services and materials testing)

U.S. Public Sector Partners

U.S. Army Tank-Automotive, Research, Development, and Engineering Center (TARDEC) (crash survivability research, funding and research planning partner)

National Highway Traffic Safety Administration National Center for Statistics and Analysis (NHTSA NCSA) (vehicle crash reconstructions)

U.S. Fire Administration (USFA) (funding partner)

Naval Air Warfare Center Aircraft Division (NAVAIR) (engineering services and materials testing)

National Registry of Emergency Medical Technicians (NREMT) (joint analysis of employee survey data)

National Highway Traffic Safety Administration (NHTSA) Office of Emergency Medical Services (EMS) (facilitated TI collaboration with NREMT)

General Service Administration Engineering and Commodity Management Division, GSA Automotive (Administers ambulance purchase specifications and vehicle procurement contracts)

City of Phoenix, Fire Department (material support)

Winter Park Florida Fire Department (developed new compartment design based in part on TI research)

Monongalia County West Virginia Emergency Medical Services (Mon EMS)
(EMS service provider, supported human subjects testing)

Canadian Public Sector Partners

Canadian Forces Health Services Group (funding and research planning partner)

Defence Research Development Canada (test facility and staff support, dynamic testing)

Ministry of Health and Long-Term Care, Ontario (material and funding support)

Sub goal 7.3: Improve protection for **emergency workers responding to large-scale disasters and terrorist attacks**

Supporting Evidence:

NIOSH Publications

Jackson BA et al. [2004]. Protecting Emergency Responders, Volume 3: Safety Management in Disaster and Terrorism Response. NIOSH Publication No. 2004-144; RAND Publication No. MG-170. Cincinnati, OH: National Institute for Occupational Safety and Health. 119 pp. (*16,923 distributed; 11,057 requested*)

NIOSH [2004]. NIOSH Update: RAND-NIOSH Study Says New Approach Needed to Protect Emergency Responders in Terrorist Attacks and Disasters. June 16, 2004.

NIOSH [2002]. Fact Sheet: Protecting Workers at the World Trade Center Site: Response from the National Institute for Occupational Safety and Health. NIOSH Publication Number 2002-143. Available on Web at: <http://www.cdc.gov/niosh/pdfs/02-143.pdf>. Last accessed on February 27, 2007.

NIOSH [2001]. Eye Safety, Emergency Response and Disaster. Web-based Fact Sheet available on Web at: <http://www.cdc.gov/niosh/eyesafe.html>. Last accessed on February 27, 2007.

NIOSH [1994]. Update: NIOSH Warns of Hazards of Flood Cleanup Work. NIOSH Publication No. 94-123. Available on Web at: <http://www.cdc.gov/niosh/flood.html>. Last accessed on February 27, 2007.

Other Publications

Jackson BA, et al. [2002]. Protecting Emergency Responders: Lessons Learned from Terrorist Attacks. Santa Monica, CA: RAND Science and Technology Policy Institute. 89 pp. Available on RAND Website at: http://www.rand.org/pubs/conf_proceedings/CF176/index.html, and the NIOSH Website at: <http://www.cdc.gov/niosh/npptl/guidancedocs/rand.html>

LaTourrette T, et al. [2003]. Protecting Emergency Responders, Volume 2: Community Views of Safety and Health Risks and Personal Protection Needs. Santa Monica, CA: RAND Science and Technology Policy Institute. 142 pp. Available on RAND Website at: http://www.rand.org/pubs/monograph_reports/MR1646/index.html and on the NIOSH Website at: <http://www.cdc.gov/niosh/npptl/guidancedocs/rand.html>

Houser A et al. [2004]. Emergency Responder Injuries and Fatalities: An Analysis of Surveillance Data. RAND Publication No. TR-100-NIOSH. Santa Monica, CA: RAND Science and Technology. 92 pp. Available on RAND Website at: (http://www.rand.org/pubs/technical_reports/TR100/).

Willis H et al. [2006]. Protecting Emergency Responders, Volume 4: Personal Protective Equipment Guidelines for Structural Collapse Events. Santa Monica, CA: RAND Infrastructure, Safety, and Environment.

Background on the broader NIOSH-RAND collaboration

On December 9-11, 2001 a conference was held in New York City that brought together individuals with experience in responding to acts of terrorism. The purpose of the conference was to hear and document the firsthand experiences of emergency responders regarding the performance, availability, and appropriateness of personal protective equipment as they responded to those events. The meeting considered the responses to the September 11, 2001 attacks at the World Trade Center and the Pentagon; the 1995 attack at the Murray Federal Building in Oklahoma City; and the responses to the Anthrax incidents in the fall of 2001. The conference attendees represented a diverse range of occupations that fulfill various roles in an emergency response situation: firefighters, police, emergency medical technicians, construction workers, union officials, and representations from local, state, and federal agencies. A final report on the December 2001 Conference proceedings entitled “Protecting Emergency Responders: Lessons Learned from the Terrorist Attacks” was written by RAND and made available electronically via the RAND and NIOSH Websites. This report was the first of a series of four “Protecting Emergency Responders” volumes.

Community Views of Safety and Health Risks and Personal Protection Needs. Following the success of the first report, RAND began a thorough process of meeting with stakeholders in the emergency response community to define the personal protection technology needs and research priorities for emergency responders. RAND conducted discussions with 190 representatives from 83 organizations involved in emergency response, including structural firefighters, emergency medical service (EMS) providers, police, emergency management officials, technology/service suppliers, researchers and program managers. The product of these discussions was a final report that synthesized the discussions into four main topics: (1) primary tasks that emergency responders undertake; (2) situations in which the risk of injury is the greatest and that have the high priority for improving personal; (3) current and emerging technologies that are critical to protecting the health and safety of emergency responders; and (4) drivers of, impediments to, and gaps in technology development. A report entitled “Protective Emergency Responders Volume 2: Community Views of Safety and Health Risks and Personal Protection Needs” was written by RAND and is available on the RAND and NIOSH Websites. The report has been used internally to guide NIOSH research on personal protective technologies. This report was discussed in the National Institute of Science and Technology (NIST) fire.gov Spring 2004 newsletter (http://www.fire.gov/newsletter/spring2004/page_one.htm) and at other industry websites (e.g., <http://www.homelandresponse.org/500/Issue/Article/False/12382/>).

Surveillance of Emergency Responders Injuries and Fatalities. The findings from the Volume 2 report were intended for use in conjunction with emergency responder injury and fatality data. To summarize the available data in this area, RAND developed another report which reviewed and analyzed available databases that provide disease, injury, and fatality data pertinent to emergency response functions and the role of personal protective technologies. The final report entitled “Emergency Responder Injuries and Fatalities: An Analysis of Surveillance Data” was published as a RAND technical report and is available via the RAND website.

Additional RAND Outputs on the RAND-TI Report

The RAND lead author of the report was interviewed by Homeland Response (an online journal). The transcript of that interview can be accessed at: <http://www.homelandresponse.org/500/Issue/Article/False/12453/Issue> (Last viewed on October 31, 2006.)

The RAND lead author of the NIOSH-RAND report testified before the House Government Reform Committee on March 30, 2006 on the topic: *Information Sharing and Emergency Responder Safety Management*. The text of this testimony can be accessed at: <http://reform.house.gov/UploadedFiles/RAND%20-%20Jackson%20Testimony.pdf#search=%22NIOSH%20RAND%20Disaster%20Safety%20Management%22> (Last viewed on October 31, 2006.)

The RAND lead author of the NIOSH-RAND report presented findings at the *Forum on Catastrophe Preparedness: Partnering to Protect Workplaces*, conducted on Friday April 7, 2006 in San Francisco. Sponsored and organized by the California Commission on Health and Safety and Workers' Compensation (CHSWC).

8. Reduce injuries and fatalities to working youth

Sub goal 8.1: Influence legislative changes to protect young workers

Supporting Evidence:

Journal Articles

Hendricks K, Myers J, Layne L, Goldcamp M [2005]. Household youth on minority operated farms in the United States 2000: Exposures to and injuries from work, horses, ATVs and tractors, *Journal of Safety Research* 36:149-157.

Higgins DN, Tierney J, Lins M, Hanrahan L [2004]. School Nurses: A Resource for Young Worker Safety, *Journal of School Nursing* 20(6):317-323.

Goldcamp M, Hendricks KJ, Myers JR [2004]. Farm fatalities to youth 1995-2000: A comparison by age groups, *Journal of Safety Research* 35(2):151-157.

Hendricks K, Goldcamp E, Myers J [2004]. On-farm Falls among Youth Less than 20-years old in the U.S., *Journal of Agricultural Safety and Health* 10(1):27-38. (19 Citations)

Higgins DN, Tierney J, Lins M, Hanrahan L [2004]. School nurses: a resource for young worker safety, *Journal of School Nursing* 20(6):10-16.

Mardis AL, Pratt SG [2003]. Nonfatal Injuries to Young Workers in the Retail Trades and Services Industries in 1998, *Journal of Occupational and Environmental Medicine* 45(3):316-323. (5 Citations)

Higgins D, Tierney J, Hanrahan L [2002]. Preventing youth worker fatalities: the Fatality Assessment and Control Evaluation (FACE) Program. *American Association of Occupational Health Nurses Journal* 50(11):508-514.

Myers JR, Adekoya N [2001]. Fatal on-farm injuries among youth 16 to 19 years of age: 1982-1994. *Journal of Agricultural Safety and Health* 7(2):101-112. (5 Citations)

Castillo DN, Davis L, Wegman DH [1999]. Young workers. *Occupational Medicine: State of the Art Reviews* 14(3):519-536. (13 Citations)

Castillo DN, Adekoya N, Myers JR [1999]. Fatal work-related injuries in the agricultural production and services sectors among youth in the United States, 1992-96. *Journal of Agromedicine* 6(3):27-41. (23 Citations)

CDC [1999]. Childhood work-related agricultural fatalities--Minnesota, 1994-1997. *MMWR* 48(16):332-335.

Hendricks K, Layne L [1999]. Adolescent Occupational Injuries in the Fast Food Industry. *Journal of Occupational and Environmental Medicine* 41(12):1146-1153. (19 Citations)

CDC [1998]. Youth agricultural work-related injuries treated in emergency departments, United States, October 1995--September 1997. *Morbidity and Mortality Weekly Report* 47(35):733-737.

Castillo DN, Malit BD [1997]. Occupational injury deaths of 16 and 17 year olds in the US: trends and comparisons with older workers. *Injury Prevention* 3(4):227-281. (7 Citations)

CDC [1996]. Work-related injuries and illnesses associated with child labor--United States, 1993. *Morbidity and Mortality Weekly Report* 45(22):464-468.

Knight EB, Castillo DN, Layne LA [1995]. A detailed analysis of work-related injury among youth treated in emergency departments. *American Journal of Industrial Medicine* 27: 793-805. (26 Citations)

Castillo DN, Landen DD, Layne LA [1994]. Occupational injury deaths of 16- and 17-year-olds in the United States. *American Journal of Public Health* 84(4): 646-649. (47 Citations)

Layne LA, Castillo DN, Stout N, Cutlip P [1994]. Adolescent occupational injuries requiring hospital emergency department treatment: a nationally representative sample. *American Journal of Public Health* 84(4): 657-660. (38 Citations)

Suruda A, Halperin W [1991]. Work-related deaths in children. *American Journal of Industrial Medicine* 19:739-745. (29 Citations)

Schober SE, Handke JL, Halperin WE, Moll MB, Thun MJ [1988]. Work-related injuries to minors. *American Journal of Industrial Medicine* 14: 585-595. (39 Citations)

NIOSH publications

NIOSH [2005]. Injury and Asthma Among Youth Less Than 20 Years of Age on Minority Farm Operations in the United States, 2000. Volume 1: racial minority national data. NIOSH Publication Number 2005-147. (3,041 distributed; 542 requested)

NIOSH [2004]. Injuries Among Youth on Farms, 2001, NIOSH Publication Number 2004-172. *(8,272 distributed; 5,050 requested)*

NIOSH [2004]. Asthma among household youth on Hispanic farm operations. NIOSH Publication No. 2004-158. *(6,578 distributed; 3,029 requested)*

NIOSH [2004]. Injuries to Youth on Minority Farm Operations. NIOSH Publication No. 2004-157. *(7,257 distributed; 3,309 requested)*

NIOSH [2004]. Worker Health Chartbook, 2004. NIOSH Publication No. 2004-146 (Special Populations: Young Workers Section, pp 266-276.)

NIOSH [2003]. Asthma Among Household Youth on Minority Farm Operations. NIOSH Publication No. 2004-118.

NIOSH [2004]. Injuries to Youth on Minority Farm Operations. NIOSH Publication No. 2004-117.

NIOSH [2003]. Preventing Deaths, Injuries, and Illnesses of Young Workers. NIOSH Publication No. 2003-128. *(31,916 distributed; 29,010 requested)*

Myers JR, Hendricks KJ [2001]. Injuries among youth on farms in the United States, 1998. NIOSH Publication No. 2001-154. *(17 citations)(7,716 distributed; 4,352 requested)*

NIOSH [1997]. Child labor research needs: Recommendations from the NIOSH child labor working team. NIOSH Publication No. 97-143.

NIOSH [1995]. Preventing Deaths and Injuries of Adolescent Workers. NIOSH Publication No. 95-125. *(101,000 distributed)*

Recommendations for/Comments on Regulations

NIOSH [2002]. National Institute for Occupational Safety and Health (NIOSH) Recommendations to the U.S. Department of Labor for Changes to Hazardous Orders. May 3, 2002.

NIOSH [2000]. Comments of the National Institute for Occupational Safety and Health on the Department of Labor notice of proposed rulemaking and request for comments on child labor regulations, orders, and statements of interpretation. Child Labor Violations--- Civil Money Penalties: 29 CFR Parts 570 and 579, January 28, 2000.

NIOSH [1994]. Comments of the National Institute for Occupational Safety and Health on the Department of Labor/Wage and Hour Division advance notice on proposed rulemaking on child labor regulations, orders and statements of interpretation, October 25, 1994.

NIOSH funded cooperative agreements and grants (parentheses include information on specific TI involvement with these projects).

Cooperative Agreements

Enhanced Surveillance of Occupational Injuries to Youth < 18 (Teens at Work project), Principal Investigator: Letitia Davis. *(TI researchers provide technical assistance to the project).*

The Youth Employment Training Pilot Program (Enhanced Surveillance Program- Wisconsin), Principal Investigator: Henry Anderson. *(TI researchers provided technical assistance to the project).*

Analysis of OSHA Investigation Reports, Principal Investigator: Anthony Suruda. *(TI researchers secured funding through DOL/ESA, helped develop the RFA, and provided technical assistance to the project).*

Surveys of Construction Employers and Young Construction Workers, Principal Investigator: Carol Runyan. *(TI researchers secured funding through DOL/ESA, helped develop the RFA, and provided technical assistance to the project).*

15 State-based Fatality Assessment and Control Evaluation Programs, States: Alaska, California, Kentucky, Iowa, Massachusetts, Michigan, Minnesota, Nebraska, New Jersey, New York, Oklahoma, Oregon, Washington, West Virginia, Wisconsin. *(TI researchers helped develop the RFA and provided technical assistance to the projects)*

Grants

Occupational Injury in Hispanic Farmworker Families, Principal Investigator: Stephen McCurdy. *(TI researchers helped develop the RFA)*

Risk Factors for Injury among Migrant and Seasonal Farmworker Children, Principal Investigator: Harlan Amandus. *(TI researchers helped develop the RFA)*

Health and Safety Risks to Children of Migrant Farmworkers, Principal Investigator: Doris Slesinger. *(TI researchers helped develop the RFA)*

The Health of Children Hired to Work on U.S. Farms, Principal Investigator: Don Villarejo. *(TI researchers helped develop the RFA)*

Economic and Psychosocial Impacts of Youth Farm Injury, Principal Investigator: John Schmelzer. *(TI researchers helped develop the RFA)*

Outcomes of Agricultural Injury to Children in Missouri, Principal Investigator: Garland Land. *(TI researchers helped develop the RFA)*

Childhood Health Outcomes in a Rural Cohort, Principal Investigator: James Merchant. *(TI researchers helped develop the RFA)*

Childhood Injuries in Washington State Agriculture, Principal Investigator: Bruce Alexander. *(TI researchers helped develop the RFA)*

Etiology and Consequences of Injuries Among Children in Farm Households, Principal Investigator: Susan Gerberich. *(TI researchers helped develop the RFA)*

Childhood Agricultural Safety and Health, Principal Investigator: David Parker. *(TI researchers helped develop the RFA)*

Childhood Agricultural Trauma Evaluation System, Principal Investigator: Debra Boyle. *(TI researchers helped develop the RFA)*

RRIS II: Agricultural Injury Surveillance, Principal Investigator: Susan Gerberich. *(TI researchers helped develop the RFA)*

Biomarkers of Pesticide Toxicity Among Teen Farmworkers, Principal Investigator: Linda McCauley. *(TI researchers helped develop the RFA)*

Evaluation of Occupational Carrying Tasks for Farm Youth, Principal Investigator: Charles Schwab. *(TI researchers helped develop the RFA)*

Work Injury and Young People: A Prospective Survey, Principal Investigator: Curtis Breslin. *(TI researchers helped develop the RFA)*

Farm Family Total Noise Exposure Assessment, Principal Investigator: Milz. *(TI researchers helped develop the RFA)*

Removing the HOOA Family Farm Exemption: Impact On Injury, Principal Investigator, Barbara Marlenga. *(TI researchers helped develop the RFA)*

Adolescent Toxic Exposures in the Workplace, Principal Investigator: Alan Woolf.

Childrens Injuries on Kentucky Beef Cattle Farms, Principal Investigator: Steven Browning.

On the Job Injury in South Texas Middle School Children, Principal Investigator: Sharon Cooper.

Safety and Youth Employment: A Study of Parents and Teens, Principal Investigator: Carol Runyan.

Study of Work Injuries in Farmworker Children, Principal Investigator: Sharon Cooper.

Pilot Study of Ag-Related Injuries Impacting Amish Community, Principal Investigator: William Field.

Adolescent Farm Work, Fatigue and Injuries in Colorado, Principal Investigator: Lorann Stallones.

Prospective Study of Hearing Damage Among Newly Hired Construction Workers, Principal Investigator, Noah Seixas. (*TI researchers secured partial funding for this project through DOL/ESA*).

Reports from TI Supported Extramural Research (not an exhaustive list):

Runyan CW, Santo JD, Schulman M, Lipscomb JH, Harris TA [2006]. Work hazards and workplace safety violations experienced by adolescent construction workers. *Archives of Pediatric & Adolescent Medicine* 160(7):721-727.

Zierold KM, Anderson HA [2006]. Severe injury and the need for improved safety training among working teens. *American Journal of Health Behavior* 30(5): 525-32.

Zierold KM, Anderson HA [2006]. Racial and ethnic disparities in work-related injuries among teenagers. *Journal of Adolescent Health* 39(3): 422-6.

Zierold MK, Anderson HA [2006]. The relationship between work permits, injury, and safety training among working teenagers. *American Journal of Industrial Medicine* 49:360-366, 2006.

Breslin FC, Smith P [2005]. Age-related differences in work injuries: a multivariate, population-based study. *American Journal of Industrial Medicine* 48(1): 50-56.

Cooper SP, Weller NF, Fox EE, Cooper SR, Shipp EM [2005]. Comparative description of migrant farmworkers vs. other students attending south Texas schools: demographic, employment, and health indicators. *Texas Medicine* 101:58-62.

Cooper SP, Weller NF, Fox EE, Cooper SR [2005]. Comparative description of migrant farmworkers vs. other students attending South Texas schools: substance use, work and injuries. *Journal of Rural Health* 21:361-366.

O'Connor T, Loomis D, Runyan C, Abboud dal Santo J, Schulman M [2005]. Adequacy of health and safety training among young Latino construction workers. *Journal of Occupational and Environmental Medicine* 47:272-277.

Seixas NS, Goldman B, Sheppard L, Neitzel R, Norton S, Kujawa SG [2005]. Prospective noise induced changes to hearing among construction industry apprentices. *Occupational and Environmental Medicine* 62: 309-317.

Zierold KM, Garman S, Anderson HA [2005]. A comparison of school performance and behaviors among working and nonworking high school students. *Family and Community Health* 28:3 214-224.

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Sub goal 8.2: Reduce child agricultural injuries

Supporting Evidence:

Journal Articles

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NIOSH [2004]. *Injuries Among Youth on Farms, 2001*, NIOSH Publication Number 2004-172. *(50,000 copies distributed)*

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NIOSH funded cooperative agreements and grants (parentheses include information on specific TI involvement with these projects).

Grants

Occupational Injury in Hispanic Farmworker Families, Principal Investigator: Stephen McCurdy. *(TI researchers provided support in developing the RFA)*

Risk Factors for Injury among Migrant and Seasonal Farmworker Children, Principal Investigator: Harlan Amandus *(TI researchers provided support in developing the RFA)*

Health and Safety Risks to Children of Migrant Farmworkers, Principal Investigator: Doris Slesinger *(TI researchers provided support in developing the RFA)*

The Health of Children Hired to Work on U.S. Farms, Principal Investigator: Don Villarejo *(TI researchers provided support in developing the RFA)*

Childhood Injuries in Washington State Agriculture, Principal Investigator: Bruce Alexander *(TI researchers provided support in developing the RFA)*

Childhood Agricultural Safety and Health, Principal Investigator: David Parker
(TI researchers provided support in developing the RFA)

Childhood Agricultural Trauma Evaluation System, Principal Investigator: Debra Boyle
(TI researchers provided support in developing the RFA)

RRIS II: Agricultural Injury Surveillance, Principal Investigator: Susan Gerberich
(TI researchers provided support in developing the RFA)

Childrens Injuries on Kentucky Beef Cattle Farms, Principal Investigator: Steven Browning

Study of Work Injuries in Farmworker Children, Principal Investigator: Sharon Cooper.

Pilot Study of Ag-Related Injuries Impacting Amish Community, Principal Investigator: William Field

Work Injury and Young People: A Prospective Survey, Principal Investigator: Curtis Breslin
(TI researchers provided support in developing the RFA)

Farm Family Total Noise Exposure Assessment, Principal Investigator: Sheryl Milz
(TI researchers provided support in developing the RFA)

Biomarkers of Pesticide Toxicity Among Teen Farmworkers, Principal Investigator: Linda McCauley
(TI researchers provided support in developing the RFA)

Evaluation of Occupational Carrying Tasks for Farm Youth, Principal Investigator: Charles Schwab
(TI researchers provided support in developing the RFA)

Adolescent Farm Work, Fatigue and Injuries in Colorado, Principal Investigator: Lorann Stallones

Etiology and Consequences of Injuries Among Children in Farm Households, Principal Investigator: Susan Gerberich
(TI researchers provided support in developing the RFA)

Economic and Psychosocial Impacts of Youth Farm Injury, Principal Investigator: John Schmelzer
(TI researchers provided support in developing the RFA)

Outcomes of Agricultural Injury to Children in Missouri, Principal Investigator: Garland Land
(TI researchers provided support in developing the RFA)

Childhood Health Outcomes in a Rural Cohort, Principal Investigator: James Merchant *(TI researchers provided support in developing the RFA)*

Psychosocial outcomes in working farm children age 10-12, Principal Investigator: Sharon Barton

Adherence to the NAGCAT and Injury Risk Reduction, Principal Investigator: J.R. Wilkins, III *(TI researchers provided support in developing the RFA)*

Effect of Work Permits in Protecting Youth Workers, Principal Investigator: Janet Dal Santo *(TI researchers provided support in developing the RFA)*

Removing the HOOA Family Farm Exemption: Impact On Injury, Principal Investigator, Barbara Marlenga *(TI researchers provided support in developing the RFA and in providing data for use in the study)*

Empirical Derivation of Work Guidelines for Youth in Agriculture, Principal Investigator: J.R. Wilkins, III *(TI researchers provided support in developing the RFA)*

Evaluation of a School-based Agricultural Health and Safety Curriculum: Work Safe Work Smart, Principal Investigator: Allan Williams

Community-based Health & Safety Interventions for Adolescents Working in Agriculture: Evaluation of a National Initiative, Principal Investigator: Barbara Lee *(TI researchers provided support in developing the RFA)*

Healthy Farm Families Initiative, Principal Investigator: Carruth AK.

Youth Teaching Youth: Are TASK Teens Ready to Teach, Principal Investigator: Robert Petrea *(TI researchers provided support in developing the RFA)*

Ag Disability Awareness and Risk Education, Principal Investigator: Deborah Reed *(TI researchers provided support in developing the RFA)*

Enhancing Agricultural Safety and Health Through Education, Principal Investigator: David Parker *(TI researchers provided support in developing the RFA)*

Evaluating Ohio's Tractor Certification Program: Traditional and Novel, Principal Investigator: J.R. Wilkins, III *(TI researchers provided support in developing the RFA)*

Wisconsin Childhood Agricultural Safety and Health Intervention, Principal Investigator: Larry Chapman *(TI researchers provided support in developing the RFA)*

Partnership for Preventing Farm Injuries to Rural Youth, Principal Investigator:
Hank Cole

Work Guidelines: Evaluation of Dissemination Methods, Principal Investigator:
Barbara Marlenga (*TI researchers provided support in developing the RFA and
obtaining a national sample of farms to participate in the study*)

An Evaluation of the North American Guidelines for Children’s Agricultural
Tasks, Principal Investigator: Sue Wright (*TI researchers provided support in
developing the RFA*)

Evaluation of NAGCAT Using Case Series of Injuries, Principal Investigator:
Barbara Marlenga (*TI researchers provided support in developing the RFA and in
providing data for use in the study*)

Evaluation of the NAGCAT Tractor Guidelines, Principal Investigator: Fathallah

Adapting NAGCAT for Ethnic Communities, Principal Investigator: John
Shutske (*TI researchers provided support in developing the RFA*)

The First Texas Bilingual Occupational Health Safety Curriculum, Principal
Investigator: Soledad Vela Acosta.

Enhancement of Health of Agricultural Populations Curriculum, Principal
Investigator: Robert McKnight

Education Outreach Program, Principal Investigator: Kelley Donham

Safety Education and Agricultural Injury Among California Rural High School
Students, Principal Investigator: Stephen McCurdy

Teaching Kids Safety on the Farm: What Works, Principal Investigator: Anne
Gadomski (*TI researchers provided support in developing the RFA*)

Communication of Pesticide Health Risks for Children of Agricultural Farm
Families, Principal Investigator: Karr

Pesticide Training for Adolescent Migrant Farm Workers, Principal Investigator:
Linda McCauley (*TI researchers provided support in developing the RFA*)

Using the ASHBMP Manual as a Tool to Reduce Farm Hazards, Principal
Investigator: Malcolm Legault (*TI researchers provided support in developing
the RFA*)

Evaluating Teen Farmworker Education, Principal Investigator: Robin Baker (*TI researchers provided support in developing the RFA*)

Effectiveness of Farm Safety Day Camps for Children, Principal Investigator: Debra McCallum (*TI researchers provided support in developing the RFA*)

Evaluation of Farm Safety 4 Just Kids Day Camp, Principal Investigator: Deborah Reed (*TI researchers provided support in developing the RFA*)

Reports from TI Supported Extramural Research (not an exhaustive list):

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Pryor SK, Carruth AK, LaCour G [2005]. Occupational risky business: injury prevention behaviors of farm women and children. *Issues in Comprehensive Pediatric Nursing* 28(1): 17-31.

Zentner J, Berg RL, Pickett W, Marlenga B [2005]. Do parents' perceptions of risks protect children engaged in farm work? *Preventive Medicine* 40(6):860-6.

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Marlenga B, Pickett W, Berg RL, Murphy D [2004]. Operational characteristics of tractors driven by children on farms in the United States and Canada. *Journal of Agricultural Safety and Health* 10(1): 17-25.

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Chapman L, Newenhouse A, Meyer R, et al [2003]. Musculoskeletal discomfort, injuries and tasks accomplished by children and adolescents in Wisconsin fresh market vegetable production. *Journal of Agricultural Safety and Health* 9(2): 91-105.

- Gerberich SC, Church TR, Renier CM, et al [2003]. Injury surveillance: Incorporation of a case-control design. *American Journal of Epidemiology* 157(11): 51.
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- Marlenga B, Pickett W, Berg RL [2002]. Evaluation of an enhanced approach to the dissemination of the North American Guidelines for Children's Agricultural Tasks: A randomized controlled trial. *Preventive Medicine* 35:150-159. (7 citations)
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Sub goal 8.3: Foster the development and widespread use of **safety materials and intervention strategies** to protect young workers

Supporting Evidence:

Journal Articles

Schulte PA, Stephenson CM, Okun AH, Palassis J, Biddle E [2005]. Integrating occupational safety and health information into vocational and technical education and other workforce preparation programs. *American Journal of Public Health* 95(3): 404-11.

Higgins DN, Tierney J, Lins M, Hanrahan L [2004]. School Nurses: A Resource for Young Worker Safety, *Journal of School Nursing* 20(6):317-323.

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Suruda A, Halperin W [1991]. Work-related deaths in children. *American Journal of Industrial Medicine* 19:739-745. (29 citations)

Schober SE, Handke JL, Halperin WE, Moll MB, Thun MJ [1988]. Work-related injuries to minors. *American Journal of Industrial Medicine* 14: 585-595. (39 citations)

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NIOSH [2004]. NIOSH safety checklist program for schools and other safety databases. NIOSH Publication No. 2004-01. (64,505 copies distributed)

NIOSH [2004]. Worker Health Chartbook, 2004. NIOSH Publication No. 2004-146 (Special Populations: Young Workers Section, pp 266-276.)

NIOSH [2004]. Preventing work-related burn injury to youth working in fast food restaurants--- fact sheet. NIOSH non-numbered publication, available at [injuryhttp://www.cdc.gov/niosh/topics/youth/pdfs/burninjury.pdf](http://www.cdc.gov/niosh/topics/youth/pdfs/burninjury.pdf).

NIOSH [2003]. Safe work for youth in construction--- information for employers. NIOSH Publication No. 2004-113. (16,932 distributed; 7,446 requested)

NIOSH [2003]. Preventing Deaths, Injuries, and Illnesses of Young Workers. NIOSH Publication No. 2003-128. (31,916 distributed; 29,010 requested)

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Bush D, Gonzalez-Arroyo M, Stock L, Delp L, Miara C, Dewey R, Sinclair R, Ortega M [1999]. Promoting safe work for young workers: A community-based approach. NIOSH Publication No. 99-141. (16,300 distributed; 8,165 requested)

NIOSH [1998]. Safety & health on the job [poster]. NIOSH Publication No. 98-120. (82,835 distributed; modified from extramural community-based demonstration projects product).

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child labor working team. NIOSH Publication No. 97-143.

NIOSH [1997]. Are you a working teen? What you should know about safety and health on the job. NIOSH Publication No. 97-132. *(291,703 distributed; 106,606 requested—modified from extramural community-based demonstration product).*

NIOSH [1997]. Control of scrap paper baler crushing hazards: Hazard Control 14. NIOSH Publication No. 97-113. *(26,416 distributed; 2,717 requested)*

NIOSH [1995]. Preventing Deaths and Injuries of Adolescent Workers. NIOSH Publication No. 95-125. *(101,000 copies distributed)*

NIOSH funded cooperative agreements and grants (parentheses include information on specific TI involvement with these projects).

Cooperative Agreements

Enhanced Surveillance of Occupational Injuries to Youth < 18, “Teens at Work” project, Massachusetts Department of Public Health, Principal Investigator: Letitia Davis *(TI researchers provide technical assistance to the project).*

The Youth Employment Training Pilot Program (Enhanced surveillance program), Wisconsin Division of Health, Principal Investigator: Henry Anderson. *(TI researchers provided technical assistance to the project).*

Protecting Young Workers in Brockton, Massachusetts Department of Public Health and the Education Development Center, Principal Investigators: Letitia Davis and Susan Gallagher. *(TI researchers provided support in developing the RFA and provided technical assistance to the project).*

Protecting Young Workers in Oakland, University of California at Berkeley, Labor Occupational Health Program, Principal Investigator: Robin Baker. *(TI researchers provided support in developing the RFA and provided technical assistance to the project).*

Protecting Young Workers in Los Angeles:, University of California at Los Angeles, Labor Occupational Safety and Health Program, Principal Investigator: Marianne Brown. *(TI researchers provided support in developing the RFA and provided technical assistance to the project).*

Northeast Young Worker Resource Center, Education Development Center, Principal Investigator: Susan Gallagher. *(TI researchers provided support in developing the RFA and provided technical assistance to the project).*

Education Intervention to Reach Working Teenagers, University of Los Angeles, Labor Occupational Safety and Health Program, Principal Investigator: Marianne Brown. *(TI researchers provided support in developing the RFA and provided technical assistance to the project).*

15 State-based Fatality Assessment and Control Evaluation Programs, States: Alaska, California, Kentucky, Iowa, Massachusetts, Michigan, Minnesota, Nebraska, New Jersey, New York, Oklahoma, Oregon, Washington, West Virginia, Wisconsin. *(TI researchers helped develop the RFA and provided technical assistance to the projects)*

Analysis of OSHA Investigation Reports, Principal Investigator: Anthony Suruda. *(TI researchers secured funding through DOL/ESA, helped develop the RFA, and provided technical assistance to the project).*

Surveys of Construction Employers and Young Construction Workers, Principal Investigator: Carol Runyan. *(TI researchers secured funding through DOL/ESA, helped develop the RFA, and provided technical assistance to the project).*

Grants

Prospective Study of Hearing Damage Among Newly Hired Construction Workers, Principal Investigator, Noah Seixas. *(TI researchers secured partial funding for this project through DOL/ESA).*

Work Injury and Young People: A Prospective Survey, Principal Investigator: Curtis Breslin.

Adolescent Toxic Exposures in the Workplace, Principal Investigator: Alan Woolf.

On the Job Injury in South Texas Middle School Children, Principal Investigator: Sharon Cooper.

Safety and Youth Employment: A Study of Parents and Teens, Principal Investigator: Carol Runyan.

Curricula Developed in TI- Supported Community-based Demonstration Projects

Safe work/safe workers: a guide for teaching high school students about occupational safety and health. Massachusetts Department of Public Health and Children's Safety Network, 1997.

Teens, work, and safety: a curriculum for high school students. University of California, Berkeley Labor Occupational Health Program, 1998.

Safe jobs for youth. UCLA Labor Occupational Safety and Health (LOSH) Program, 1998.

Educational Materials Used in Outreach by Massachusetts Young Worker Surveillance Project, some Modified from Brockton Community-based Demonstration Project. Similar products were developed in the other Community-based projects, but are not reflected below:

Protecting Young Workers: A Guide for Building a State Surveillance System for Work-Related Injuries to Youths. A how-to guide on conducting surveillance for work-related injuries to youths. (2005)

Are You a Working Teen? Pamphlet for teens with information on child labor laws and health and safety (2004)

Under 18 and hurt on the job?: Information on Workers' Compensation. Pamphlet for teens on workers' compensation. (2002)

Massachusetts Employers' Guide: Young Worker Health & Safety and the Child Labor Laws. Recommendations for employers and a poster of the child labor laws applicable in Massachusetts. (2003)

Child labor Laws in Massachusetts. Revised poster summarizing state and federal child labor laws. (2006)

Protecting Your Working Teen: A Guide for Parents. One sheet version of former pamphlet containing child labor laws and related information. Available in English and Portuguese. (2002)

Protecting Working Teens: A Guide for Health Care Providers. Pamphlet for health care providers with information about child labor laws and what to talk to teens about regarding work. (2003)

Preventing Work-Related Injuries to Teens: Newsletter from the Teens at Work Injury Surveillance and Prevention Project. Biannual newsletter published by the Teens at Work Project. (2001, 2003)

Surveillance Updates: 1993-1999. Series of six fact sheets on injuries to teens in Massachusetts between 1993-1999 on each of the top five industries in Massachusetts and one on all industries. (2000)

First Aid for Burn Poster in Restaurants. Poster on first aid for heat burns in restaurants available in English, Spanish, and Portuguese. (2004)

Know your Rights. Poster for teens with information about wages, hours, health and safety. (1996)

Reports from TI Supported Extramural Research (not an exhaustive list):

Runyan CW, Santo JD, Schulman M, Lipscomb JH, Harris TA [2006]. Work hazards and workplace safety violations experienced by adolescent construction workers. *Archives of Pediatric & Adolescent Medicine* 160(7):721-727.

Zierold KM, Anderson HA [2006]. Severe injury and the need for improved safety training among working teens. *American Journal of Health Behavior* 30(5): 525-32.

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Zierold MK, Anderson HA [2006]. The relationship between work permits, injury, and safety training among working teenagers. *American Journal of Industrial Medicine* 49:360-366, 2006.

Breslin FC, Smith P [2005]. Age-related differences in work injuries: a multivariate, population-based study. *American Journal of Industrial Medicine* 48(1): 50-56.

O'Connor T, Loomis D, Runyan C, Abboud dal Santo J, Schulman M [2005]. Adequacy of health and safety training among young Latino construction workers. *Journal of Occupational and Environmental Medicine* 47:272-277.

Seixas NS, Goldman B, Sheppard L, Neitzel R, Norton S, Kujawa SG [2005]. Prospective noise induced changes to hearing among construction industry apprentices. *Occupational and Environmental Medicine* 62: 309-317.

Zierold KM, Garman S, Anderson HA [2005]. A comparison of school performance and behaviors among working and nonworking high school students. *Family and Community Health* 28:3 214-224.

Weller NF, Basen-Engquist K, Cooper SP, Kelder SH, Tortolero SR, Hassan S [2004]. School-year employment among middle school students in South Texas: prevalence and patterns. *Journal of Children's Health* 2:87-102.

Weller NF, Tortolero SR, Cooper SP, Kelder SH, Hassan S [2004]. School-year employment among South Texas middle school students: effects on academic, social, and physical functioning. *Journal of Children's Health* 2:103-117.

Zierold KM, Anderson H [2004]. Trends in blood lead levels among children enrolled in the special supplemental Nutrition program for women, infants, and children from 1996 to 2000. *American Journal of Public Health* 94:1513-1515.

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