

VI. TI Strategic Goals for the Future

Beginning in 2005, NIOSH developed and implemented a matrix management structure to coordinate cross-Institute programmatic activities. The NIOSH Program Portfolio consists of eight (8) NORA Sector Programs that represent industrial sectors; fifteen (15) Cross-Sector Programs organized around adverse health outcomes, statutory programs, and global efforts; and seven (7) Coordinated Emphasis Areas that support the Sector and Cross-Sector Programs (see Table 1, page 16).

The Traumatic Injury (TI) Research Program is one of the Cross-Sector Programs within the matrix structure. A NIOSH TI steering committee was formed to develop strategic goals and outcome measures for NIOSH TI research. This committee, with input from research staff across the Institute, recently developed the following interim research goals. The strategic plan for TI research is evolving as the TI steering committee considers input from external partners. We look forward to feedback and input from the National Academies' review in this planning process to help us maximize the relevance, quality and impact of the NIOSH TI Program.

NIOSH Traumatic Injury Research Program Interim Goals

Strategic Goal 1: Reduce Fall Injuries in the Workplace

1.1: Reduce fall-related fatalities and injuries in the construction industry

Intermediate Goal 1.1.1: Analyze existing data sets, including injury investigation reports, to identify the detailed sources and causes of fall-to-lower-level fatalities and injuries in the construction industry.

Intermediate Goal 1.1.2: Identify and summarize the existing measures, best practices, and intervention evaluations for preventing falls-to-lower-level in the construction industry for each injury source (i.e., roof, scaffold, and ladder) and priority task (i.e., roofing, masonry, painting and paper hanging, and carpentry).

Intermediate Goal 1.1.3: Identify and characterize falls from elevation among Hispanic construction workers.

Intermediate Goal 1.1.4: Evaluate the effectiveness of fall prevention technologies, programs, and communication materials in the construction industry.

Intermediate Goal 1.1.5: Transfer current knowledge and best practices on fall prevention and protection to construction special trade contractors, general building contractors, and Hispanic construction workers including current standards, PPE technologies, and available technologies and methodologies in other fields that can be utilized in the construction applications.

Intermediate Goal 1.1.6: Provide the scientific basis for and facilitate the development of public health campaigns on fall prevention in the construction industry.

1.2: Reduce fall-related injuries in the health services industry

Intermediate Goal 1.2.1: Characterize and track fall-related injuries in the health services industry, including determination of fall sources and causes.

Intermediate Goal 1.2.2: Identify and summarize preventive measures and products, current guidelines, best practices, and intervention evaluations for slip, trip, and falls (STF) applicable to the health services industry.

Intermediate Goal 1.2.3: Evaluate the effectiveness of fall prevention technologies, programs, and communication materials in the health service industry.

Intermediate Goal 1.2.4: Summarize and transfer current knowledge on effective interventions and best practices for fall prevention and protection to nursing care facilities and hospitals as well as family service and residential care institutes.

Intermediate Goal 1.2.5: Provide the scientific basis for and facilitate the development of public health campaigns on fall prevention in the health services industry.

1.3: Reduce fall-related injuries in the wholesale and retail trade industry

Intermediate Goal 1.3.1: Analyze existing data resources to determine the major sub-sectors in the retail and wholesale trade that have the highest fall-related injuries and fatalities and identify their sources and causes of fall injuries.

Intermediate Goal 1.3.2: Identify and summarize existing protective measures, best practices, and intervention evaluations for preventing falls in the high-risk sub-sectors of the retail and wholesale trade industry.

Intermediate Goal 1.3.3: Evaluate the effectiveness of fall prevention technologies, programs, and communication materials in the wholesale and trade industries.

Intermediate Goal 1.3.4: Summarize and transfer current knowledge on fall prevention and protection to retail merchandise stores that have the highest risk of fall-related injuries and fatalities (grocery stores and wholesale stores for vehicles, furniture, and construction materials suppliers).

Intermediate Goal 1.3.5: Provide the scientific basis for and facilitate the development of public health campaigns on fall prevention in the trade industry.

1.4: Reduce fall-related injuries through research on biosciences underlying human fall initiation, fall dynamics, fall termination, and control measures.

Intermediate Goal 1.4.1: Identify, analyze and summarize the existing gaps in fall-prevention and fall-protection research and technology.

Intermediate Goal 1.4.2: Develop innovative fall-prevention strategies that mitigate fall initiation hazards, especially during roofing, framing, scaffolding, and ladder-using jobs.

Intermediate Goal 1.4.3: Develop new and improved fall-protection systems and devices to reduce the forces to the human body during fall arrest and fall termination.

Intermediate Goal 1.4.4: Develop scientifically comprehensive yet easy-to-use digital models of human fall dynamics, including the phases of fall initiation and fall termination, for use in efficient evaluation of new fall prevention and protection methods and strategies, and in fall incidents investigation (reconstruction), and workers' hazard recognition training.

Strategic Goal 2: Reduce occupational injuries and deaths due to motor-vehicles

2.1: Reduce motor-vehicle-related incidents in the TWU industry Sector. [TWU Strategic Goal 7]

Intermediate Goal 2.1.1: Characterize and track injuries among truck drivers. [TWU Strategic Goal 1]

Intermediate Goal 2.1.2: Identify risk factors associated with occupational motor-vehicle crashes. [TWU Strategic Goal 7.2]

Intermediate Goal 2.1.3: Reduce motor-vehicle-related injuries and deaths due to fatigue, distraction, and sleep disturbance. [TWU Strategic Goal 4]

Intermediate Goal 2.1.4: Evaluate the effectiveness of technologies and other means of reducing the incidence of motor-vehicle-related injuries. [TWU Strategic Goal 7]

2.2: Reduce fatal and serious nonfatal injuries to workers in roadway construction work zones

Intermediate Goal 2.2.1: Quantify worker exposure to being run over by construction vehicles and equipment operating inside roadway construction work zones. [Construction Intermediate Goal 2.1]

Intermediate Goal 2.2.2: Evaluate the potential for proximity warning system (PWS) use on road construction equipment to reduce worker exposure to being run over. Assess existing systems and explore development of new improved PWS technology. [Construction Intermediate Goal 2.2]

Intermediate Goal 2.2.3: Evaluate the potential for Internal Traffic Control Plans (ITCPs) to reduce worker exposure to being run over by construction equipment. [Construction Intermediate Goal 2.3]

Intermediate Goal 2.2.4: Improve availability and use of operator visibility limit information for road construction vehicles and equipment. [Construction Intermediate Goal 2.4]

Intermediate Goal 2.2.5: Evaluate worker injury risks associated with the expanded use of night work in the road construction industry. [Construction Intermediate Goal 2.5]

Intermediate Goal 2.2.6: Provide the scientific basis for campaigns to promote widespread usage of effective prevention measures in the road construction industry. [Construction Intermediate Goal 2.6]

2.3: Reduce injuries and fatalities from motor-vehicle incidents, including being struck by vehicles, among public safety and emergency response workers. [Services Intermediate Goal 1]

Intermediate Goal 2.3.1: Identify and evaluate the leading risk factors for motor-vehicle incidents among public safety and emergency response workers, including being struck by vehicles, and provide effective recommendations to reduce the number of fatalities and days-away-from-work incidents. [Services Intermediate Goal 1]

Intermediate Goal 2.3.2: Identify and evaluate the effectiveness of interventions such as driver training in reducing motor-vehicle-related injuries and deaths among public safety and emergency response workers, including volunteer response workers such as volunteer fire fighters. [Services Intermediate Goal 1]

Intermediate Goal 2.3.3: Develop and promulgate information on appropriate body restraints for fire fighters and emergency medical service when operating or riding in emergency response vehicles. [Services Intermediate Goal 1]

2.4: Reduce occupational road traffic injuries worldwide. [TWU Strategic Goal]

Intermediate Goal 2.4.1: Identify risk factors for occupational road traffic injuries outside the U.S.

Intermediate Goal 2.4.2: Develop road safety materials targeted to employees posted overseas.

Strategic Goal 3: Reduce occupational injuries and deaths due to workplace violence

3.1: Reduce workplace violence in the transportation, warehouse, and utilities industries.

Intermediate Goal 3.1.1: Develop and assess models that increase participation and compliance to effective interventions that reduce violence among high-risk taxicab driver populations.

3.1.1.1: Conduct research studies to demonstrate the effectiveness of model programs that increase compliance of high-risk taxicab drivers to adopt effective interventions that reduce violence risk.

3.1.1.2: Develop partnerships with community organizations, police departments and their associations, and taxicab associations, and implement a model program in at least one community to increase the number of taxicabs compliant with effective interventions.

3.2: Reduce workplace violence among high-risk wholesale and retail trade workers including grocery stores, gasoline stations, convenience stores, bakeries, and liquor stores.

Intermediate Goal 3.2.1: Increase the reliability and availability of surveillance data sets for workplace violence in high-risk wholesale and retail trade industries and occupations.

Intermediate Goal 3.2.2: Identify factors that increase risk of workplace violence among wholesale and retail workers who are employed in high-risk wholesale and retail establishments.

Intermediate Goal 3.2.3: Implement effective interventions that reduce violence among high-risk populations of workers in the high-risk wholesale and retail trade sector.

3.2.3.1: Identify management practices that minimize the risks of workplace violence in high-risk wholesale and retail establishments.

3.2.3.2: Complete an assessment of intervention methods to reduce the incidence and severity of violent incidents.

3.2.3.3: Identify and evaluate successful community policing program models which increases participation and compliance to implementing NIOSH and OSHA guidelines for prevention of robbery and robbery-related assault in late-night retail businesses.

Intermediate Goal 3.2.4: Improve transfer, diffusion, and adoption of effective workplace violence interventions in high robbery-risk wholesale and retail trade sector businesses.

3.2.4.1: Utilize partnerships with employers, labor unions, trade associations, police departments and their associations, and government agencies to increase the knowledge of workplace violence risks and potential strategies and interventions that limit risks in high-risk wholesale and retail trade businesses.

3.2.4.2: Develop and implement communication plans for effective workplace violence intervention strategies that are demonstrated to have reached target audiences in the wholesale and retail trade sector.

3.2.4.3: Utilize partnerships with employers, trade associations, government agencies, police departments and their associations, and crime prevention organizations to increase WPV prevention knowledge among police departments and implement a successful community policing program which increases business compliance to interventions and reduces robbery-related assaults in three communities.

Intermediate Goal 3.2.5: Use reliable economic models to accurately assess the costs of fatal and nonfatal injuries from workplace violence and the potential savings from reducing incidence and severity of workplace violence events.

3.2.5.1: Complete an assessment of reduction in costs due to implementation of a successful community policing program in one community.

3.2.5.2: Disseminate return on investment and cost data to community partners to promote compliance to NIOSH and OSHA guidelines for retail workplace violence prevention.

3.3: Identify risk factors and effective interventions to prevent workplace violence among high-risk services, healthcare, and social service sector workers such as eating and drinking establishment workers; hotels/motel workers; automotive repair mechanics; teachers; nurses and nursing assistants in general medical, home healthcare, nursing homes, and psychiatric hospitals; social service workers in job training, residential care, and day care industries; private security workers; and public safety and correctional workers in emergency response tasks (e.g., medical services, police calls, and correctional officer activities).

Intermediate Goal 3.3.1: Conduct studies to identify factors associated with trauma from workplace violence among high-risk services sector workers.

3.3.1.1: Conduct etiologic research studies to identify the conditions that lead to physical or psychological trauma from workplace violence among high-risk services sector workers.

3.3.1.2: Identify work organization strategies that minimize the risks of psychological trauma due to harassment, intimidation, bullying, and sabotage.

3.3.1.3: Evaluate the factors associated with fatal and nonfatal workplace violence incidents among youth worker populations in high-risk services sector industries.

Intermediate Goal 3.3.2: Conduct studies to increase the reliability and availability of surveillance data sets for workplace violence in high-risk service sector industries and occupations.

3.3.2.1: Identify a prioritized list of essential information for efficient population-based surveillance of verbal aggression and physical trauma from workplace violence in high-risk industries and occupations, and in priority populations (similar to the data collected through the National Crime Victimization Survey for physical trauma).

3.3.2.2: Develop at least one effective partnership with employers, unions, government, or non-governmental organizations to collect ongoing surveillance information about verbal aggression and physical trauma from workplace violence.

3.3.2.3: Interpret surveillance information to help identify and eliminate workplace conditions that lead to physical trauma from workplace violence and disseminate the results.

3.3.2.4: Distribute and publicize surveillance data sets that include parameters on workplace violence for widespread use by extramural investigators.

Intermediate Goal 3.3.3: Develop effective interventions that reduce violence among high-risk populations of workers in the services sector.

3.3.3.1: Validate at least three intervention methods to reduce the incidence and severity of violence in high-risk service sector industries.

3.3.3.2: Develop at least three partnerships with employers or trade associations in high-risk service sector industries to implement interventions in WPV programs and evaluate compliance to effective intervention strategies that have been demonstrated to reduce workplace violence.

Intermediate Goal 3.3.4: Improve transfer, diffusion, and adoption of effective workplace violence interventions in high-risk service sector industries, particularly for small businesses.

3.3.4.1: Utilize partnerships with employers, labor unions, trade associations, and government agencies in the service sector to increase the knowledge of workplace violence risks and potential strategies to limit risks.

3.3.4.2: Develop and implement communication plans for effective workplace violence intervention strategies that are demonstrated to have reached target audiences in the range of small to large employers.

Intermediate Goal 3.3.5: Use reliable economic models to accurately assess the costs of fatal and nonfatal injuries from workplace violence and the potential savings from reducing incidence and severity of workplace violence events among service sector workers.

3.3.5.1: Disseminate return on investment and cost data to community partners to promote compliance to NIOSH and OSHA guidelines for retail workplace violence prevention.

Strategic Goal 4: Reduce occupational injuries and deaths due to machines and industrial vehicles.

4.1: Reduce occupational injuries and deaths due to machines and industrial vehicles in the Agriculture, Forestry and Fishing Industry, with an emphasis on tractor-related injuries and deaths.

Intermediate Goal 4.1.1: Complete testing and market development of the NIOSH AutoROPS for zero-turn riding mowers for adoption by manufacturers.

Intermediate Goal 4.1.2: Complete testing and market development of the NIOSH AutoROPS for medium horsepower tractors for adoption by manufacturers.

Intermediate Goal 4.1.3: Complete testing and market development of the NIOSH cost-effective rollover protective structures (CROPS) for retrofitting older tractors without ROPS for adoption by manufacturers.

Intermediate Goal 4.1.4: Characterize and track injuries and fatalities from machinery and industrial vehicles in commercial fishing.

Intermediate Goal 4.1.5: Identify and prioritize risk factors associated with machinery and industrial vehicles in commercial fishing.

Intermediate Goal 4.1.6: Reduce the incidence of on-deck machinery entanglements on commercial fishing vessels through continued development of emergency-stop (e-stop) and other machine guarding technologies.

Intermediate Goal 4.1.7: Characterize and track injuries and fatalities from machinery and industrial vehicles in logging.

Intermediate Goal 4.1.8: Identify and prioritize risk factors associated with machinery and industrial vehicles in logging.

Intermediate Goal 4.1.9: Identify work situations at high-risk for machine-related fatal injury and develop prevention strategies for those who can intervene in the workplace by conducting Fatality Assessment and Control Evaluation (FACE) investigations of targeted occupational fatality incidents.

4.2: Reduce occupational injuries and deaths due to machines and industrial vehicles in the Construction Industry.

Intermediate Goal 4.2.1: Quantify worker exposure to being run over by construction vehicles and equipment operating inside roadway construction work zones. [Construction Intermediate Goal 2.1]

Intermediate Goal 4.2.2: Evaluate the potential for proximity warning system (PWS) on road construction equipment to reduce worker exposures to being run over. Assess existing systems and explore development of new improved PWS technology. [Construction Intermediate Goal 2.2]

Intermediate Goal 4.2.3: Evaluate the potential for internal traffic control plans (ITCPs) to reduce worker exposure to being run over by construction equipment. [Construction Intermediate Goal 2.3]

Intermediate Goal 4.2.4: Improve availability and use of operator visibility limit information for road construction equipment. [Construction Intermediate Goal 2.4]

Intermediate Goal 4.2.5: Evaluate worker injury risks associated with the expanded use of night work in the road construction industry. [Construction Intermediate Goal 2.5]

Intermediate Goal 4.2.6: Provide the scientific basis for campaigns to promote widespread usage of effective prevention measures in the road construction industry.

Intermediate Goal 4.2.7: Validate a computer simulation model to analyze the impact of dynamic loading of scissor lifts for evaluating fall, collapse, and tip-over incidents for use in improving equipment design and developing effective safety devices for adoption by equipment manufacturers.

Intermediate Goal 4.2.8: Identify work situations at high-risk for machine-related fatal injury and develop prevention strategies for those who can intervene in the workplace by conducting Fatality Assessment and Control Evaluation (FACE) investigations of targeted occupational fatality incidents.

4.3: Reduce occupational injuries and deaths due to machines and industrial vehicles in the Manufacturing Industry.

Intermediate Goal 4.3.1: Characterize and track injuries and fatalities from machinery and industrial vehicles.

Intermediate Goal 4.3.2: Identify and prioritize risk factors associated with machinery and industrial vehicles.

Intermediate Goal 4.3.3: Identify work situations at high-risk for machine-related fatal injury and develop prevention strategies for those who can intervene in the workplace by conducting Fatality Assessment and Control Evaluation (FACE) investigations of targeted occupational fatality incidents.

Intermediate Goal 4.3.4: Evaluate the effectiveness of technologies and other means of reducing the incidence of injuries and fatalities from high-risk machinery and industrial vehicles.

Intermediate Goal 4.3.5: Complete the testing and market development of the NIOSH JamAlert for passively controlling hazardous energy during un-jamming tasks on industrial balers for adoption by manufacturers.

Intermediate Goal 4.3.6: Complete the NIOSH evaluation of the ANSI B11 TR3 machine risk reduction methodology and provide recommendations to OSHA on the adoption of new ANSI and ISO methods for machine risk reduction.

Intermediate Goal 4.3.7: Complete testing and market development of the NIOSH radio frequency (HASARD) device for passively controlling hazardous energy from worker proximity to conveyors for adoption by manufacturers.

4.4: Reduce occupational injuries and deaths due to machines and industrial vehicles in the Mining Industry.

Intermediate Goal 4.4.1: Develop interventions for preventing injuries related to machine safety and powered haulage equipment. [Mining Intermediate Goal 4.2]

Intermediate Goal 4.4.2: Investigate wearable sensor technologies for empowering the miner to take proactive steps in decreasing his/her exposure to work-related injuries. [Mining Intermediate Goal 4.3]

Intermediate Goal 4.4.3: Develop interventions, best practices, and strategies for improving miners' training with respect to hazard recognition, risk factor awareness, and emergency response. [Mining Intermediate Goal 4.5]

Strategic Goal 5: Reduce occupational injuries and deaths among high-risk and vulnerable worker groups.

5.1: Reduce occupational injuries and deaths among youth workers.

Intermediate Goal 5.1.1: Track trends in youth worker injuries and deaths.

Intermediate Goal 5.1.2: Partner with educational groups to increase youth education on occupational safety.

Intermediate Goal 5.1.3: Provide empirical data to guide the development and enforcement of child labor laws.

Intermediate Goal 5.1.4: Partner with governmental agencies, child safety advocates, safety groups, trade associations, and others to communicate young worker safety information.

5.2: Reduce occupational injuries and deaths among older workers.

Intermediate Goal 5.2.1: Characterize and track trends in older worker injuries and deaths.

Intermediate Goal 5.2.2: Identify risk factors for injury and death among older workers.

Intermediate Goal 5.2.3: Evaluate intervention strategies to prevent older worker injuries and deaths.

Intermediate Goal 5.2.4: Partner with governmental agencies, senior citizen organizations, and others to communicate older worker safety information.

5.3: Reduce occupational injuries and deaths among high-risk ethnic and minority workers.

Intermediate Goal 5.3.1: Characterize and track trends in injuries and death among ethnic and minority workers.

Intermediate Goal 5.3.2: Identify risk factors for injury and death among high-risk ethnic and minority workers.

Intermediate Goal 5.3.3: Partner with governmental agencies, safety groups, environmental justice organizations, social organizations, and others to develop and evaluate effective culturally-sensitive prevention strategies.

Intermediate Goal 5.3.4: Partner with governmental agencies, safety groups, environmental justice organizations, social organizations, and others to communicate safety information to employers and high-risk ethnic and minority workers.

5.4: Reduce occupational injuries and deaths among immigrant workers.

Intermediate Goal 5.4.1: Characterize and track trends in injuries and death among immigrant workers.

Intermediate Goal 5.4.2: Identify risk factors associated with injury and death among immigrant workers.

Intermediate Goal 5.4.3: Partner with governmental agencies, safety professionals, immigrant organizations, and international agencies to communicate safety information to employers and immigrant workers.