

***Preparing the Emerging Workforce for  
Safe and Healthy Employment***

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**Presentation to the NIOSH Board of Scientific Counselors**

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*The findings and conclusions in this report are those of the author and do not necessarily represent the views of the National Institute for Occupational Safety and Health.*

## Presentation overview

- NIOSH Safe • Skilled • Ready Workforce (SSRW) Program
- Young worker safety and health
- *Talking Safety* and related research
- Contingent worker safety and health
- Other vulnerable populations
- Future research and directions
- Questions and suggestions

# NIOSH SSRW program

*Before joining the U.S. workforce for the first time, or starting a new job, all workers will have the foundational knowledge and skills they need to stay safe at work and to contribute to a safe, healthy, and productive workplace.*



Workplace safety and health knowledge, skills, and abilities (NIOSH 8 Core Competencies) are the foundation for a lifetime of safe and healthy work.

# NIOSH 8 Core Competencies

Ability to:

- Understand short-and long-term effects of job injuries & illnesses;
- Identify job hazards & control methods;
- Understand worker rights & responsibilities;
- Communicate about safety problems on the job

## WHY TEACH LIFE SKILLS?



- Fundamental, portable, transferable
- Theoretically based (Okun, Guerin & Schulte, 2016)
- Missing from employability skills frameworks

<https://www.cdc.gov/niosh/safe-skilled-ready/core.html>

# NIOSH SSRW Program

## Goals

- Promote Core Competencies
- Develop, maintain, and evaluate workplace safety and health training curricula
- Conduct intervention/evaluation research
- Translate research to practice (and practice to research)

## Focus

- Young workers
- Contingent workers
- Other vulnerable groups

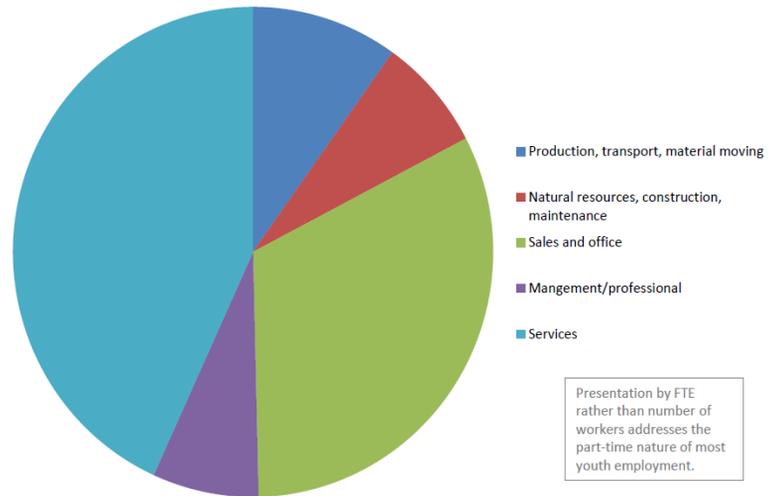
## Partners

- Education
- Industry
- Labor, trade & professional associations
- Community organizations
- Government
- Academia

# Young Worker Safety and Health

# Work: A Formative Experience

- Young workers:  $\leq$  age 24;  $<$  18 a special group of interest
- In the U.S., work has a positive impact on young people's lives
  - Develop independence, self-efficacy (Mortimer, 2010)
  - Paid work a "unique, consequential microsystem" (Staff, Messersmith & Schulenberg, 2009)
- 80% - 90% of teens work while in high school (BLS, 2005)
- Teens  $<$  18 mostly work in services (restaurants), office, retail



Distribution of Employed Youth FTEs (Ages 16-17) by Occupation, United States, 2015

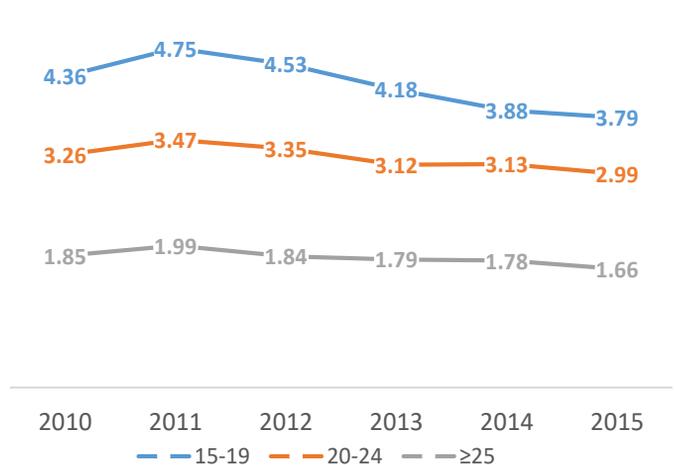
Source: BLS, CPS; NIOSH Division of Safety Research

# Young Worker Injuries

In the United States, adolescents:

- 16-19 had the third highest incidence rate among all age groups (101.9/10,000 FTEs) of nonfatal occupational injuries/illnesses (BLS, 2017)
- 15-17 are ~ 2x more likely as adults (over 24) to be seriously hurt at work
- Job injuries for youth (< 19) have an estimated cost of \$5 billion/year (Miller & Waehler, 1998).

RATE OF EMERGENCY DEPARTMENT TREATED NON-FATAL INJURIES (PER 100 FTE) FOR WORKERS AGES



Source: NIOSH NEISS Work-RISQS

# Mallory's Story



## EDITOR'S CHOICE

### How Can Helicopter Parents Have Missed Young Worker Safety?

Children learn to not play with matches, to look out for cars when crossing the street, and to be careful around swimming pools when they are three or four years old—so soon as they are old enough to understand the message—but we never talk to young people about staying healthy and safe at work. Everybody works. And as a society, we essentially do nothing—we send adolescents off to their first jobs as dishwashers, cashiers, construction helpers, and lifeguards, with hardly a word about how to protect themselves on the job. Every year in the United States, nearly 60,000 adolescents younger than 18 years are sent to the emergency department for job-related injuries; around 40 are killed annually. Young workers (aged <25 years) are injured at twice the rate of adult workers—that means a young person is injured on the job every minute in this country. These injuries can permanently damage young workers and their family, cost the US economy billions of dollars each year, and are all preventable.

The National Institute for Occupational Safety and Health (NIOSH) developed a free, one-hour, interactive training module for the American Industrial Hygiene Association (AIHA) called *Safety Matter* ([bit.ly/2p2Qq8n](http://bit.ly/2p2Qq8n)), based on an earlier series of modules from its Youth@Work—Talking Safety curriculum ([bit.ly/2q7Ej3C](http://bit.ly/2q7Ej3C)). These curricula deliver foundational information in occupational safety and health, and equip young people with knowledge and skills they need before entering the workforce (e.g., how to recognize work hazards, what to do in an emergency, what their rights are as employees, and who to go to if they feel unsafe at work). Meanwhile, model legislation has been passed in Oklahoma to help ensure that all young people are exposed to basic workplace safety and health knowledge and skills before graduating high school—a sustainable approach to training. With these two advances in mind, AIHA went to its membership requesting help at the three levels of engagement. We hope to engage

members of the American Public Health Association and beyond in joining us as we put NIOSH's work into action.

The easiest way to get involved is to create opportunities to deliver the one-hour *Safety Matter* module to young people. It is easy to do, and you do not need to be an occupational safety and health expert or a teacher. Think neighborhood schools and community- or faith-based groups. Since its debut in November 2015, more than 300 people have signed up to become *Safety Matter* ambassadors at [bit.ly/aihasafetymatters](http://bit.ly/aihasafetymatters).

The next level of engagement is to get the full series of modules of the free NIOSH Talking Safety curriculum adopted by local school systems. If you serve on a school board or parent-teacher association, live with a teacher, or are neighbors with the principal, make the request. We have also used the presentation of *Safety Matter* at a school as an opening for discussing the full curriculum.

The brain ring is to engage elected representatives to require awareness-level workplace health and safety training for all young people. AIHA has posted the model legislation, along with some talking points and a letter template for anyone to edit and use to start the conversation.

Individuals are making this happen right now across the country, delivering the *Safety Matter* module in classrooms. One practitioner in Idaho got this in front of 600 high-school teachers at an education conference. Another took it to an allied professional association to expand our volunteer base. At the time of this writing, a bill in Texas has been proposed based on the model legislation.

How different might tomorrow's workplaces be if we really looked to upstream prevention and started this conversation with our kids today? *AJPH*

Steven E. Lacey, PhD, CHA, CSP  
President  
American Industrial Hygiene Association  
[doi:10.1093/AJPH.2017.1031903](http://doi.org/10.1093/AJPH.2017.1031903)



## 16 YEARS AGO

### Obstacles to Research on LGBT Populations and Their Consequences

Many obstacles stand in the way of our gathering knowledge about LGBT populations. Some are methodological; others are related to homophobia and heterosexism, which place LGBT studies outside the mainstream in terms of importance and allocation of resources.... It is also important to note that these research challenges are not unique to LGBT populations. Researchers surveying... ethnic, minority groups, specific age groups, [and] residents in rural areas... meet similar challenges.... In turn, lack of data on LGBT populations has led to the neglect of important health issues. For example, lack of data hindered the inclusion of sexual orientation in the US Government's Healthy People 2010, which set health priorities for the next decade.

From *AJPH*, June 2001

## 7 YEARS AGO

### The Feasibility of Including Sexual Orientation in Public Health Surveys

Washington's surveillance system modification illustrates the real-world feasibility of collecting comprehensive, population-based LGB health data, with a heterosexual comparison group, and also the capacity to measure progress toward improving LGB community health.... Our experience also provides evidence that information about sexual orientation and health can be efficiently gathered as part of established population-based health surveys.... Although public health agencies may be concerned that asking about sexual orientation is too controversial, the very small percentage of respondents who answered "don't know" or who refused to respond suggests otherwise. The majority (97%) of respondents gave clear information about their sexual orientation.

From *AJPH*, March 2010

# Contributing Factors

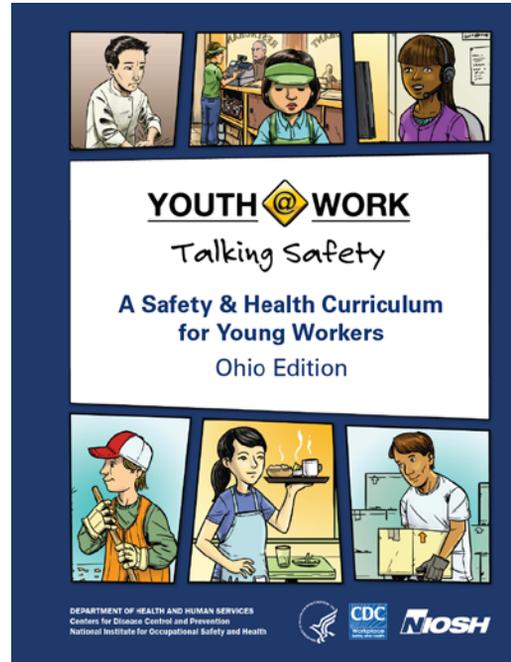
- Physical development and cognitive maturational factors (Sudhinaraset & Blum, 2010)
- Adolescent sensation-seeking, risk-taking (Steinberg, 2008)
- Exposure to physical hazards (Mardis & Pratt, 2003)
- Inexperience; lack of job control; lack of supervision and training (Tucker & Turner, 2013; Zierold, & Anderson, 2006)
- Lack of understanding of legal protections



**Youth @ Work – *Talking Safety***

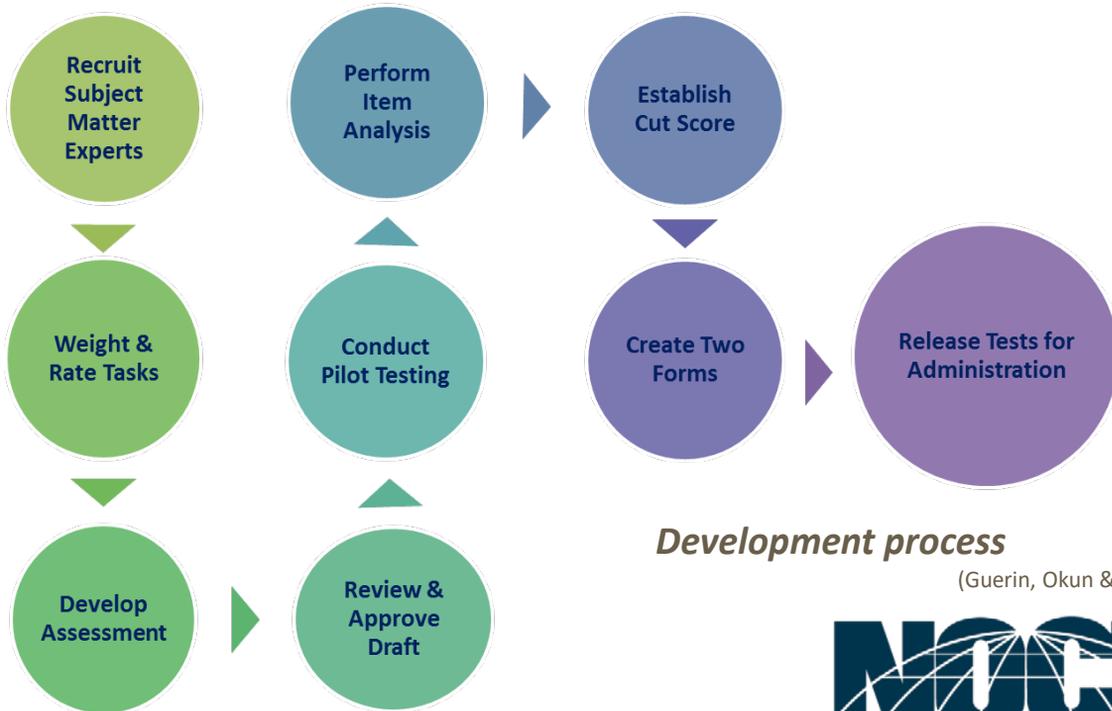
# NIOSH Young Worker Curriculum

- Free, fun & interactive
- Teaches *Core Competencies*
- Aligned with: National Health Education Standards, Common Career Technical Core, Common Core
- Customized for each state and U.S. territory – 54 versions (& Spanish); Six 45-minute lessons
- *Has an online assessment, digital badge*
- *Evidence and theory-based*



<http://www.cdc.gov/niosh/talkingsafety/>

# Talking Safety Assessment



*Development process*

(Guerin, Okun & Kelly, 2016)



# Talking Safety Digital Badge

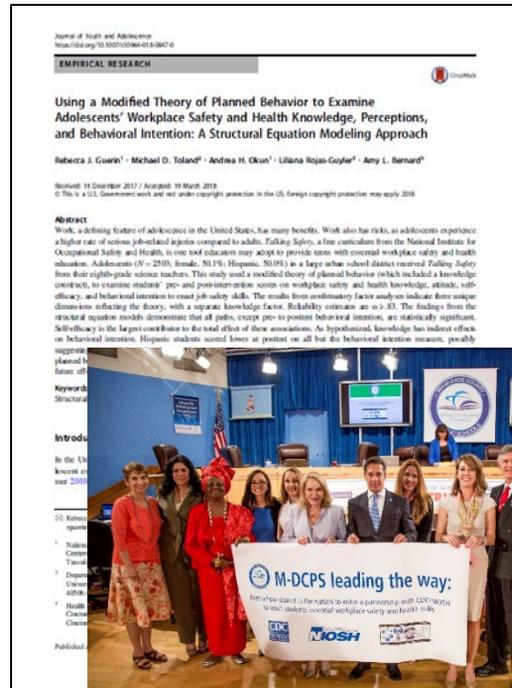
- Provides a visual acknowledgement of knowledge/learning
- Awarded by institutions, organizations, groups
- Provides meta-data, a “verification” of learning
- Can be added to ePortfolio, LinkedIn, Facebook, and more



# Building the Evidence Base

## Miami-Dade Public Schools Intervention/translation research

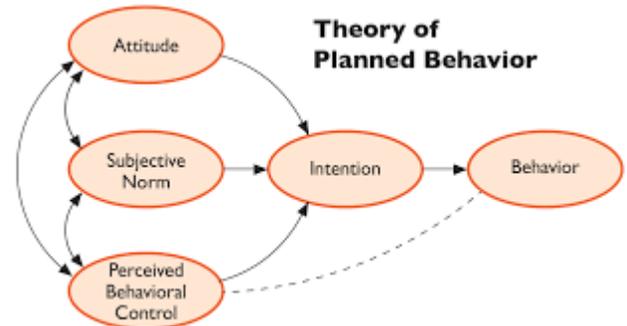
- Scores aligned with theory (Ajzen, 1991)
- Students ( $N \approx 4,300$ ) had significant increases in workplace safety knowledge, attitude, self-efficacy, behavioral intention (& norms) (Guerin et al., 2018)
- Dose/response relationship between teacher implementation and student outcomes
  - Linking implementation fidelity to outcomes a “gold standard” in translation research for training/curricula (O’Donnell, 2008)



*M-DCPS Superintendent, Alberto Carvahlo (center), and the Board of Education*

# Talking Safety – Measuring Outcomes & Impact

- Theory of planned behavior: behavioral intention is the most proximal antecedent of action
- Supported by extensive evidence (Webb & Sheeran, 2006)
- **Talking Safety is effective at changing adolescents' intention to engage in OSH activities** (Guerin et. al, 2018)
- Intermediate outcomes should be considered measures of success (injury outcomes very distal) (Downes, Novicki & Howard, 2018).



(Ajzen, 1991)

# Building the Evidence Base

## Oklahoma

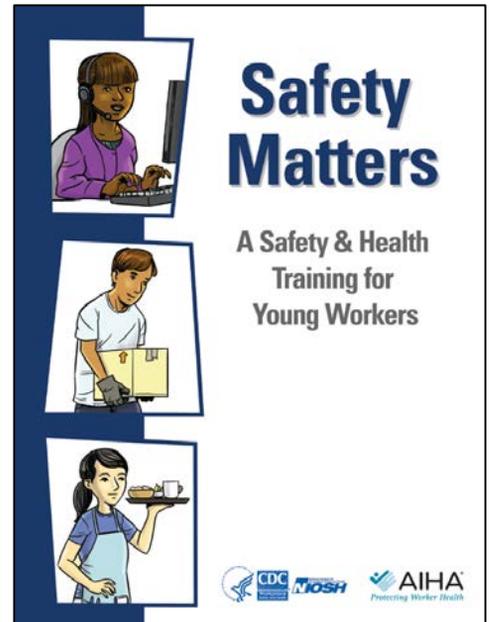
- Passage of SB262; signed into law April 1, 2015 by Gov. Mary Fallin
- Conduct 4-year intervention/translation study in OKCPS on *Talking Safety* integration, ~8,000 high school students
  - Conduct randomized controlled trial (RCT). The gold standard for demonstrating training effectiveness (Flay et al., 2005; Gottfredson et al., 2015)
- Preliminary results: statistically significant shifts in OSH knowledge



*Oklahoma Governor Mary Fallin signs SB262*

# NIOSH + AIHA: *Safety Matters*

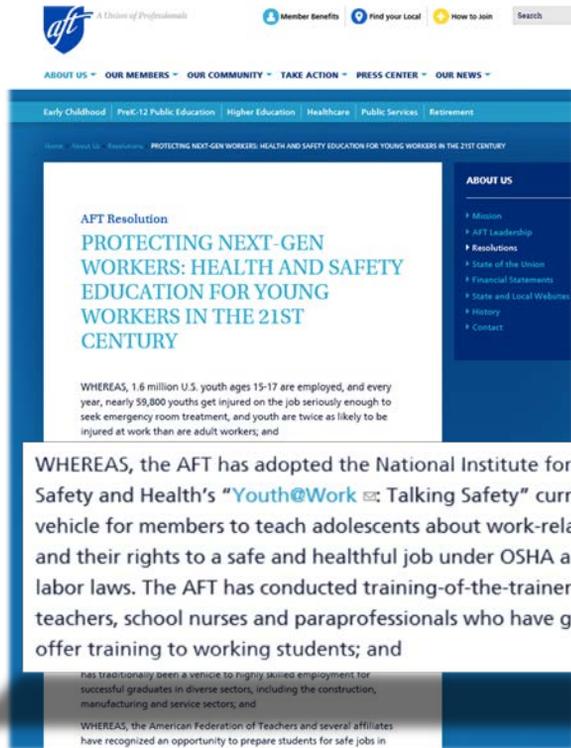
- Partnered with the American Industrial Hygiene Association (AIHA) since 2013
- Developed a 1-hour training for 7th-12th grade students
- Adapted from *Talking Safety*
- Used by AIHA members to teach OSH competencies
  - AIHA Members – worked for passage of H.B. 2010 (September 2017) in Texas for the integration of OSH into public schools



# NIOSH + AFT

Partnered with the American Federation of Teachers (AFT) since 2013. AFT:

- Trained teachers across the U.S. on *Talking Safety*
- Made *Talking Safety* available on Share my Lesson (~1.2 million users)
- Aligned *Talking Safety* with Common Core State Standards
- Passed a national resolution to protect Next-Gen Workers (2017)



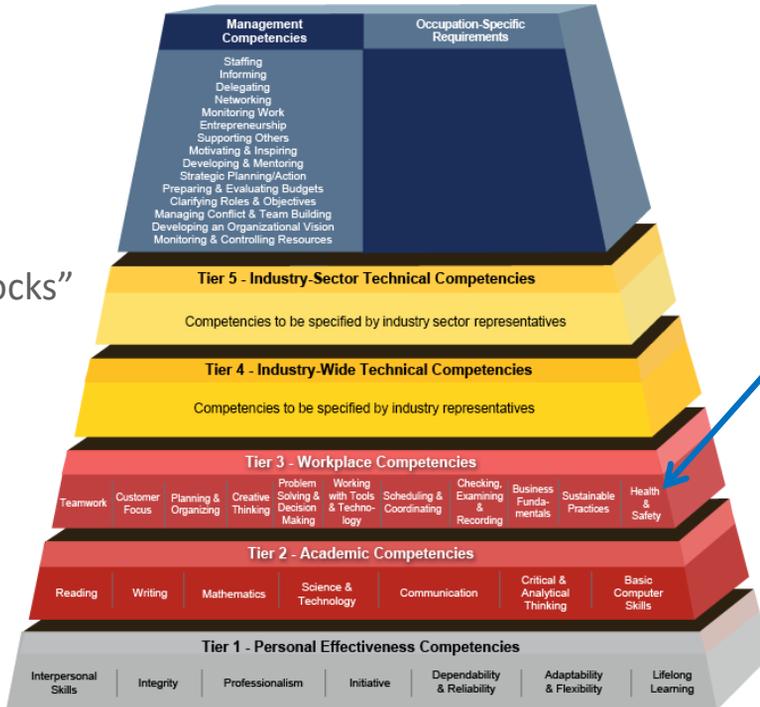
The screenshot shows the AFT website's resolution page. The header includes the AFT logo and navigation links for Member Benefits, Find your Local, How to Join, and Search. The main navigation bar lists categories like Early Childhood, Post-12 Public Education, Higher Education, Healthcare, Public Services, and Retirement. The page title is 'AFT Resolution: PROTECTING NEXT-GEN WORKERS: HEALTH AND SAFETY EDUCATION FOR YOUNG WORKERS IN THE 21ST CENTURY'. The main content area features the title and a 'WHEREAS' clause. A white box highlights the text: 'WHEREAS, the AFT has adopted the National Institute for Occupational Safety and Health's "Youth@Work: Talking Safety" curriculum as a vehicle for members to teach adolescents about work-related hazards and their rights to a safe and healthful job under OSHA and state child labor laws. The AFT has conducted training-of-the-trainer courses for teachers, school nurses and paraprofessionals who have gone on to offer training to working students; and'. A sidebar on the right contains an 'ABOUT US' section with links to Mission, AFT Leadership, Resolutions, State of the Union, Financial Statements, State and Local Websites, History, and Contact.

WHEREAS, the AFT has adopted the National Institute for Occupational Safety and Health's "Youth@Work: Talking Safety" curriculum as a vehicle for members to teach adolescents about work-related hazards and their rights to a safe and healthful job under OSHA and state child labor laws. The AFT has conducted training-of-the-trainer courses for teachers, school nurses and paraprofessionals who have gone on to offer training to working students; and

<https://www.aft.org/resolution/protecting-next-gen-workers-health-and-safety-education-young-workers-21st>

# NIOSH + U.S. DOL: *Competency Models*

“Building Blocks”  
Model



# Contingent Worker Safety and Health

# Increased Injury Risk for Contingent Workers

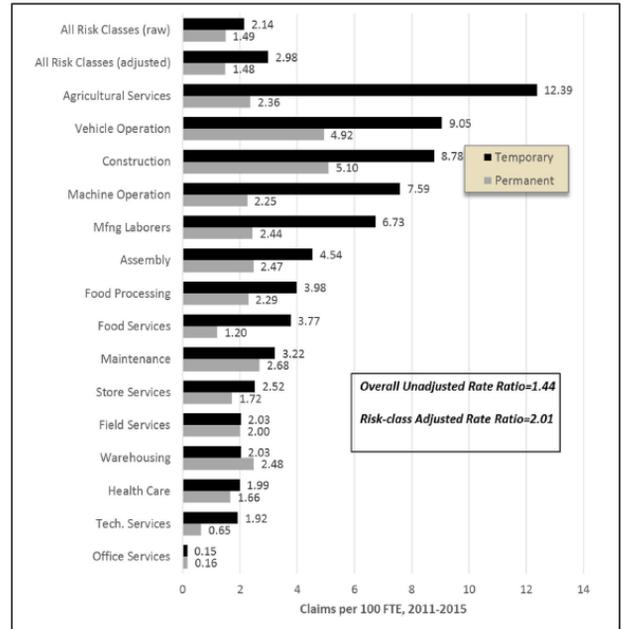
Contingent workers: “Persons who do not expect their job to last or describe their job as temporary” (BLS, 2005)

- Temporary staffing employees
- Contractors
- On-call workers
- Seasonal workers

Evidence of increased risk (Boden et al., 2016; Foley et al., 2017; Howard, 2017; Smith et al., 2010)

Some contributing factors:

- Hazardous jobs
- Young/inexperienced/new
- Dual-employment
- Job insecurity



Foley M. Factors underlying observed injury rate differences between temporary workers and permanent peers. *Am J Ind Med.* 2017;60:841-851.

# OSHA + NIOSH

TWI BULLETIN NO. 4



## Temporary Worker Initiative

### Safety and Health Training

This is part of a series of guidance documents developed under the Occupational Safety and Health Administration's (OSHA's) Temporary Worker

In most cases, the **host employer** is responsible for site-specific training and the **staffing agency** is responsible for generic safety and health training.

temporary workers to a business, typically, the staffing agency and the staffing agency's client, commonly referred to as the **host employer**, are joint employers of these workers. Both employers

begins work on a project and the training must be in a language and vocabulary the worker understands. Depending on the industry, worksite,

# SSRW Contingent Worker Activities: Two Pathways

## Workforce development sector

- Workforce Innovation and Opportunity Act (WIOA)
- Serves over 15 million people/year, one-stop career centers
- Activities guided by state and local boards

## SSRW project partners:

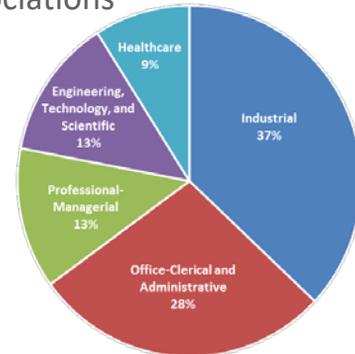
- Workforce Tulsa
- National Association of Workforce Boards (NAWB)

## Temporary staffing industry

- ~20,000 staffing companies in the U.S. that employ ~15 million annually
- Represents multiple industries

## SSRW project partners:

- Temporary staffing companies and associations



**Other vulnerable populations**

# Staying Safe @ Work

- High work injury rate for workers with intellectual and developmental disabilities (IDD)
- OSH training limited

## SS@W:

- Developed with the Labor Occupational Health Program (LOHP)
- Built on NIOSH Core Competencies
- Designed for workers with IDD
- Used by employment agencies, community vocational rehabilitation programs, and others



**Staying Safe at Work**  
A Curriculum for Teaching Workers with Intellectual and Developmental Disabilities about Health and Safety on the Job

LABOR OCCUPATIONAL HEALTH PROGRAM  
University of California Berkeley  
and  
DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Centers for Disease Control and Prevention  
National Institute for Occupational Safety and Health



<https://www.cdc.gov/niosh/docs/2016-159/default.html>

## *American Indian/Alaska Native outreach*

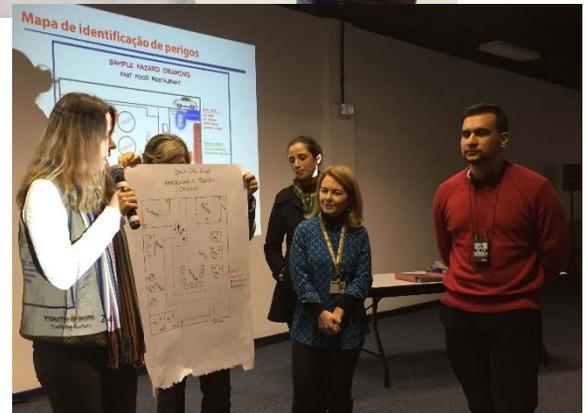
- Partner with Chickasaw and Choctaw Nations to tailor *Talking Safety* for AI youth
- Collaborate with *WeRNative* to promote OSH skills, knowledge and abilities
- Participate on NIOSH Tribal Collaborations Team
  - 2015 Diversity Award Recipient



# SESI Brazil

Provided training and technical assistance to SESI (*Serviço Social da Indústria*) to:

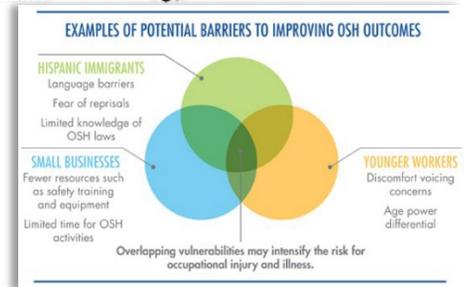
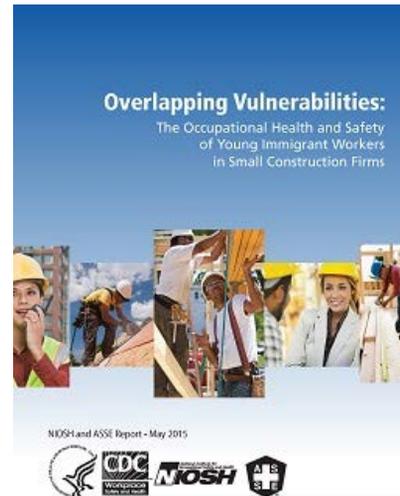
- Adapt *Talking Safety* to the Brazilian context
- Facilitate implementation within the SESI supported schools in the state of Rio Grande do Sul, Brazil
- Advance the NIOSH Strategic Goal to *enhance international worker safety and health through global collaborations*



**What's Next?**

# On-going/future activities

- Partner with OSHA Training Institute and staffing companies to develop effective, tailored training
- Conduct RCTs, best practice for training effectiveness research
  - *There is a “general lack of high quality randomized trials in the area of OHS training effectiveness”* (Robson et al., 2012)
- Conduct implementation research
  - Explore barriers and incentives to adoption/implementation
  - *Assess: how much is enough?*
- Examine *overlapping vulnerabilities*



# We Need Your Input!

How do we?...

- Integrate OSH into *all* schools
- Identify other pathways to reach contingent (and other vulnerable) workers
- Engage the business community
- Identify new partners and champions
- Identify dissemination channels
- Measure outcomes and impact
- Continue to build the evidence base



**Questions?  
Thank you!**

**SSRW Program**

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Devin Baker, MEd, Social Scientist

For more information, contact CDC  
1-800-CDC-INFO (232-4636)  
TTY: 1-888-232-6348 [www.cdc.gov](http://www.cdc.gov)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.



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