



National Institute of Environmental Health Sciences
Your Environment. Your Health.

NIEHS Worker Training Program Technical Workshop

May 15, 2019





National Institute of Environmental Health Sciences
Your Environment. Your Health.

Why this topic?

Culminating with the need to better identify and address the connection between hazards in the workplace and psychological stress

**National Institute of Environmental Health Sciences,
Worker Training Program**

**Tony Mazzocchi Center for Health, Safety, &
Environmental Education**



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Context for Work-related deaths, injuries and diseases in 2017

- ❖ 5,147 workers were killed on the job in the United States.
- ❖ An estimated 95,000 workers died from occupational diseases.
- ❖ About 3 million non-fatal injuries reported to BLS.
 - ❖ Underreporting is well-recognized.
- ❖ So where does **Occupational stress** and **addiction** fit in?



Understanding Stress

- A normal condition of life
- Necessary for health and survival
- Can have positive or negative effects
- Most people deal with it daily and recover



Neurophysiology of stress

- ❖ Sudden and severe stress produces:
 - Increase in heart rate,
 - Increase in breathing,
 - Lungs dilate
 - Decrease in digestive activity
 - Reduced feeling of hunger
 - Reduced functionality of digestive and reproductive systems

- ❖ Chronic stress suppresses important functions

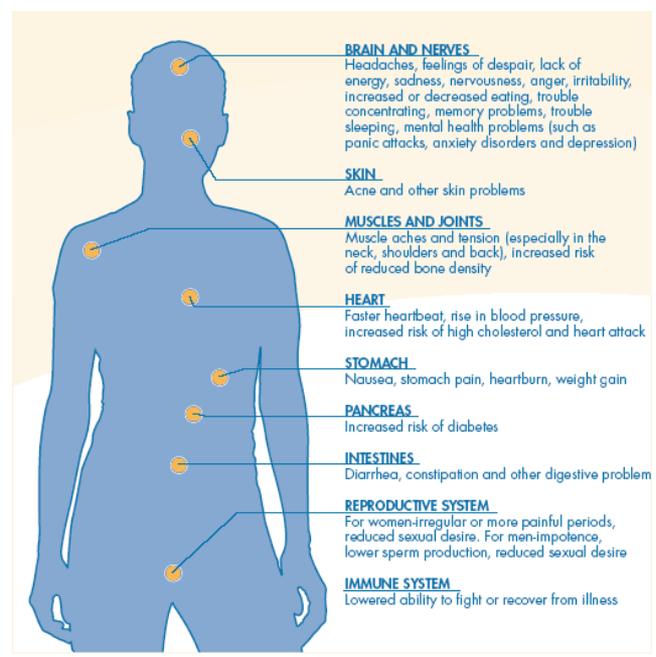
Pathways of stress response

The body has several reactions to stress. Here these dynamics are broken down based on the duration of their metabolic reactions.

Effects	Reaction	Time
Immediate	Epinephrine and norepinephrine from the sympathetic nervous system	2 – 3 seconds
Intermediate	Epinephrine and norepinephrine from the adrena medulla	20 – 30 seconds
Prolonged	ACTH, vasopressin, and thyroxine from the neuroendocrine pathways	Minutes, hours, days, or weeks

Stress effects on the body

- Stress may have a negative impact on the following systems:
 - Cardiovascular
 - Respiratory
 - Musculoskeletal
 - Endocrine
 - Immune
 - Reproductive System



Stressful working conditions and Fatigue

- **Stressful working conditions:**
- Increase the likelihood of injury and illness
- **Fatigue:**
- Contributes to failing to use proper equipment and safety procedures
- Causes impairment similar to alcohol
- Affects alertness, reaction times, and performance



Cumulative stress

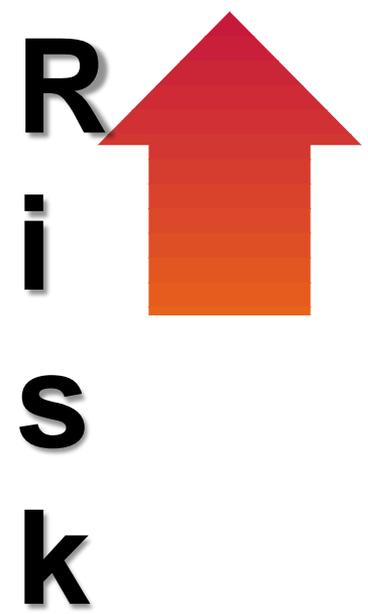
- Grinding stress, hopelessness, that wears people down over time
- Destroys bodies, minds, and lives
- Produces negative changes in:
 - Mental and physical health
 - Performance
 - Relationships
 - Personality



Stress increases risk

Stress causes the fight, flight, or freeze response which may impact:.

- Concentration
- Morale
- Fatigue
- Anxiety or irritability
- **Alcohol or drug use**
- Overeating or loss of appetite
- Workplace incidents
- Workplace bullying/violence



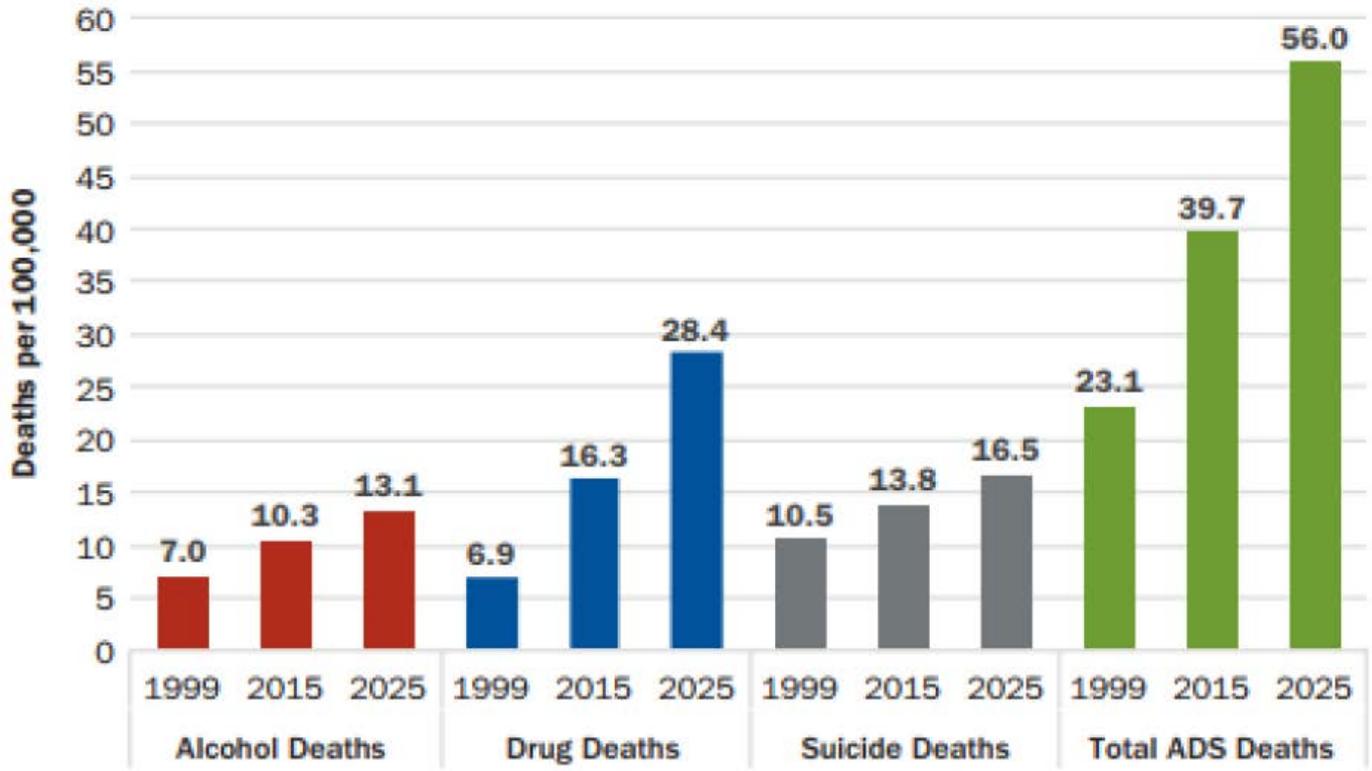
National health emergency declared October 26, 2017

- Drug overdose fatalities exceeded auto accidents as a cause of death for the first time in 2016. Illegally manufactured fentanyl is chiefly responsible for the current crisis.



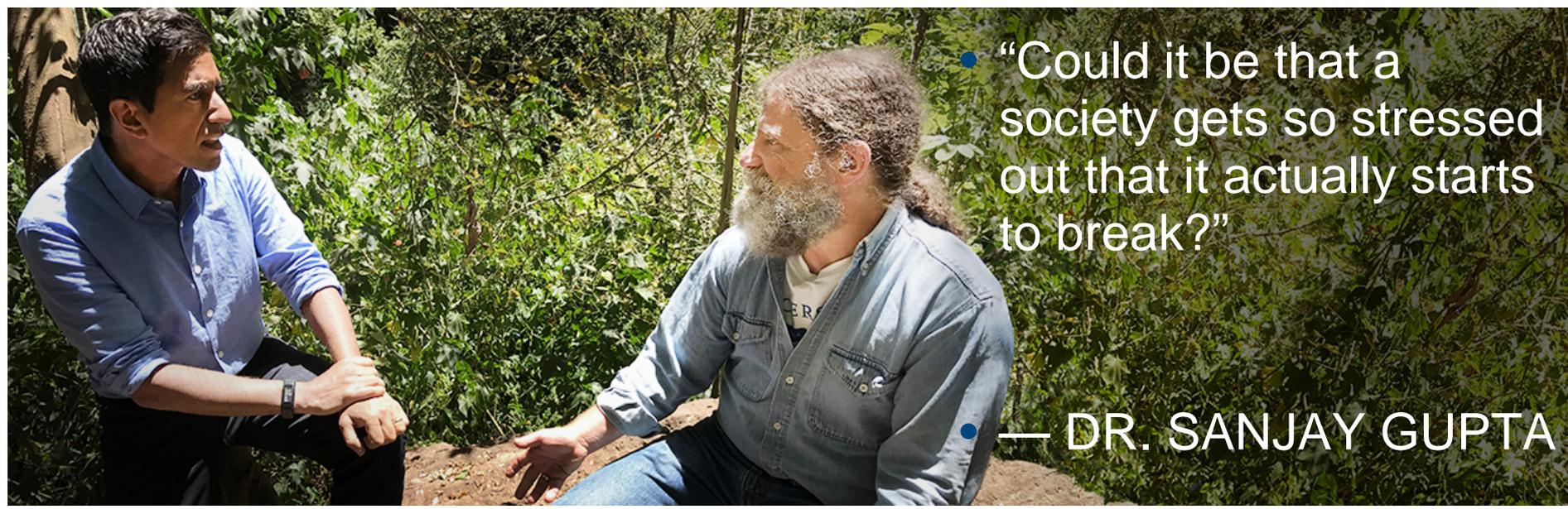
U.S. life expectancy has decreased 3 years in a row!

U.S. Drug, Alcohol or Suicide-related Deaths





Deaths of “despair”



- “Could it be that a society gets so stressed out that it actually starts to break?”

- — DR. SANJAY GUPTA



Root causes

- Work/life balance issues
- Inadequate staffing
- Two tier wage systems
- Mandatory overtime
- Split shifts
- Contract work/ gig economy

Impacts

- Occupational stress
- Fatigue
- Bullying/ Violence
- Workplace injury/illness
- Presenteeism
- Burnout or is it “morale injury”
- Injury/exposures

What are key gaps in S&H leading to stress, injury, and pain?

- **No OSHA standards on:**
 - Ergonomics
 - Workplace Violence Prevention
 - Indoor Air Quality
 - Slips, trips, and falls
 - Hazardous drugs in healthcare
 - Psychological health at work
 - Minimum staffing
 - Outdated chemical standards
- **Other potential gaps:**
 - Lack of management commitment/ worker involvement
 - Safety culture/ safety climate
 - Inadequate hazardous assessment and control
 - Occupational stress and bullying
 - Lack support systems: sick leave, EAP, family leave

Importance of ergonomics

- **Ergonomics** is the science of fitting the job to the worker. Designing work stations and tools to reduce work-related musculoskeletal disorders (MSDs)
- **Risk factors:** lifting, bending, reaching, pushing, pulling, moving heavy loads, working in awkward body postures and performing repetitive tasks.

• Examples of Musculoskeletal Disorders (MSDs)

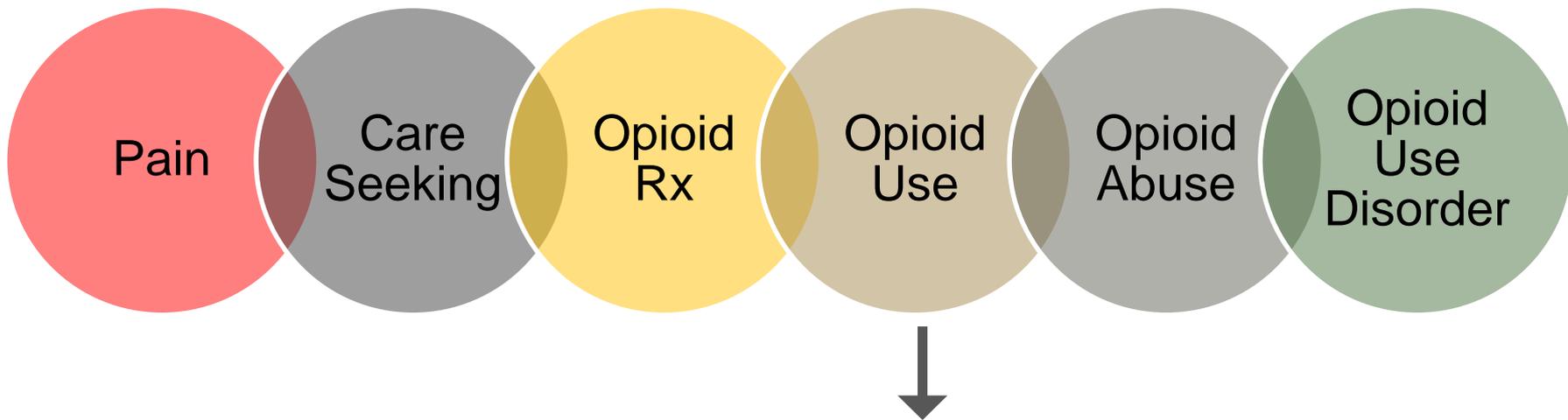
- Carpal tunnel syndrome
- Tendinitis
- Rotator cuff injuries (affects the shoulder)
- Epicondylitis (affects the elbow)
- Trigger finger
- Muscle strains and low back injuries

Musculo-Skeletal Disorders in 2017

- 344,970 MSD cases, US BLS
- 34% of the lost work time cases in manufacturing alone
- 77% in construction
- Associated with widespread use of prescription pain medication.



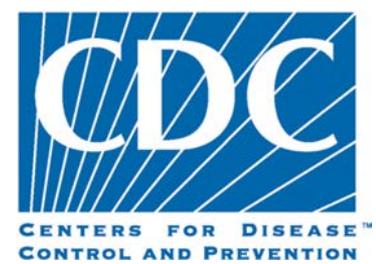
Pathway to addiction



An opioid triggers a chemical response in the brain's reward center

– the same reaction a brain has to intense pleasure –
and causes the release of excess amounts of dopamine.

The American Medical Association, the American Society of Addiction Medicine, as well as most medical associations, and the CDC define substance abuse disorder as a disease, like diabetes, cancer, and heart disease.

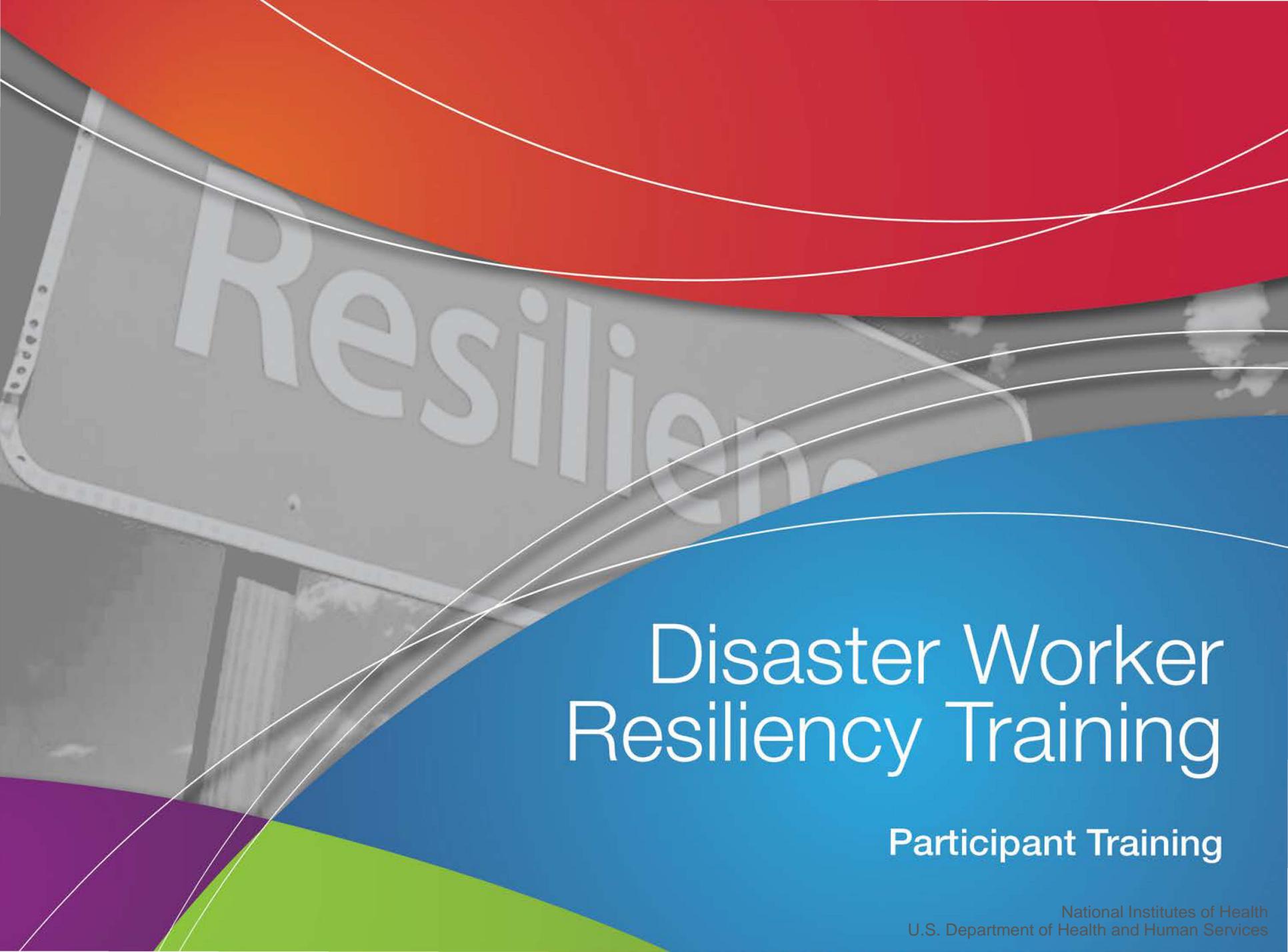


ASAM American Society of
Addiction Medicine



What have we done?

- ❖ Disaster Worker Resilience Training Program being used by grantee community.
- ❖ Training tool, Prevention of Occupational Exposure to Fentanyl & Other Opioids
- ❖ In development, Opioids and the Workplace, Prevention & Response
- ❖ Fall 2018 Meeting on Opioids Related Hazards in the Workplace, Developing a Training Framework to Address Exposure, Use, & Prevention
- ❖ Many grantees are developing and integrating training on addiction, suicide, mental health, and occupational stress into their curriculum catalogues.



Resilience

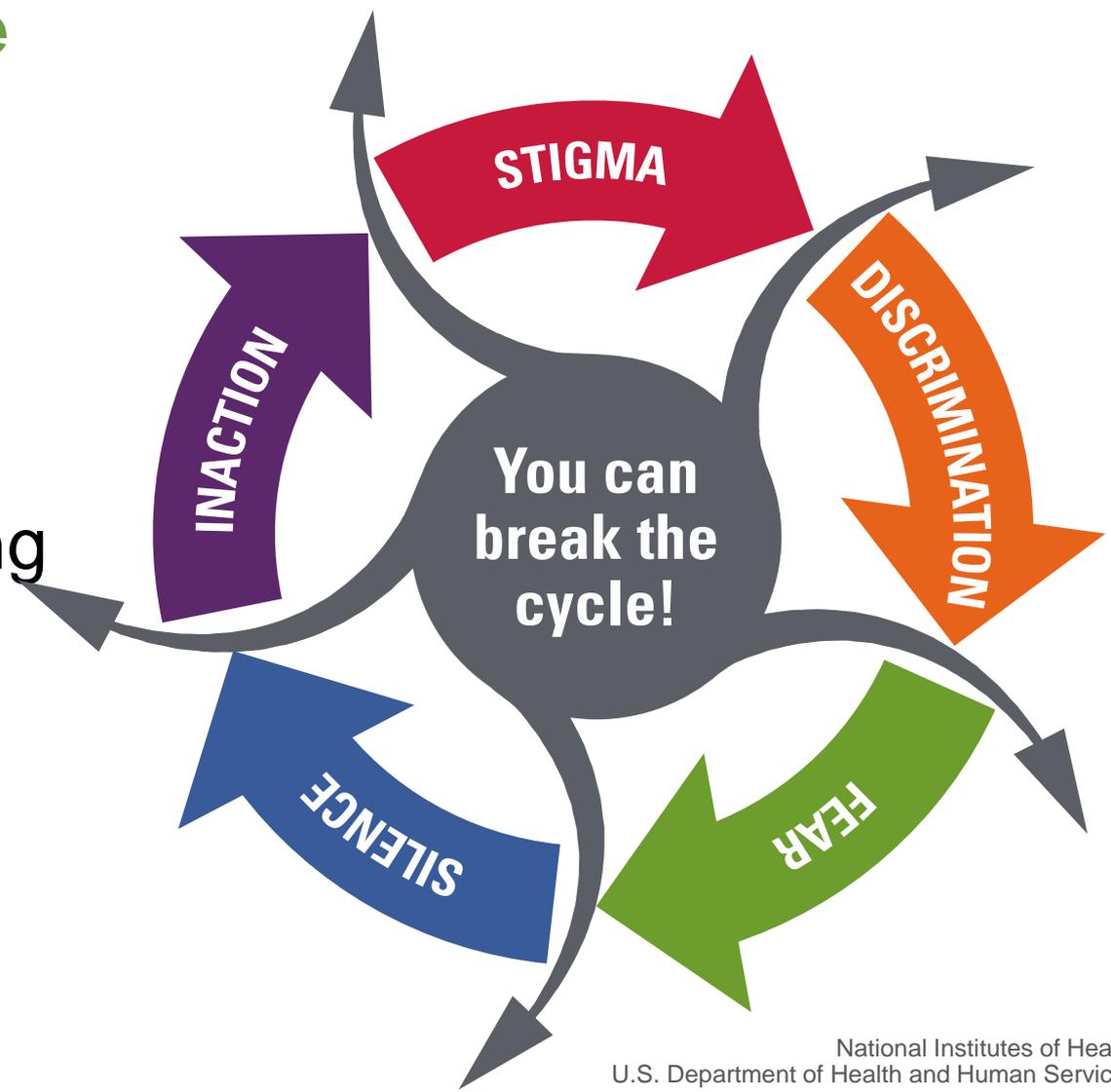
Disaster Worker Resiliency Training

Participant Training

Barriers to Talking about Mental Health

Break the Silence

- Stigma
- Discrimination
- Fear
- Misunderstanding
- Culture



Be **STRONG** enough to
stand alone,
SMART enough to know
when you need help,
and **BRAVE** enough to
ask for it.

NIEHS WTP Opioids Workplace Training Materials Project.

- NIEHS (WTP) activities in information development, training tool development and dissemination of opioid-related health and safety materials.
- Perform assessment and evaluation activities in the collection, organization, analysis, preparation, processing and reporting of programmatic information related to the Opioid Training project.
- Collect, analyze, organize, and develop training materials to address and support the reduction of the occupational impact of opioid use and abuse.
- Participate and provide a medical and public health perspective to the development of strategy, operations, and evaluation of the WTP Opioid Training Materials Development Project.



In conclusion...

- Mental health, suicide, and addiction are having a profound impact on workers, their families, and the workplace.
- Our goal over the next two days is to learn from the speakers and each other about the impact, causes, and solutions to these fundamental problems.
- We hope to you will leave with ideas for integrating work on these topics into your training programs.