

# Practical applications to address mental health and wellbeing in the maritime industry

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# Disclosures

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Research presented here was funded by CDC/NIOSH through an IPA (intergovernment personnel act) to Dr. Baker at the University of Washington. Results presented here don't reflect the official views of CDC/NIOSH or the other collaborators on this project, including US DOT/MARAD, SOCP, CMTS, US Coast Guard.

Work presented here was reviewed by the University of Washington Human Subjects Division.



# Hello!

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## > What I am:

- Washington state native
- Public Health professor
- Occupational health & safety researcher

## > What I am not:

- Psychiatrist, counselor, or psychologist (I cannot give medical advice!)



**I love  
Mariners!**

Wrigley Field  
Chicago  
June 2007

**W**

# Learning objectives for our time together



1. Describe mental health, stress, and trauma and how the workplace can influence mariner wellbeing.
2. Reflect on the experiences of mariners and how those experiences may influence their mental health.
3. Discuss steps employers and organizations can take to improve worker mental health and respond to trauma/stressors.

**Start with a thought experiment...**



**Think of a job you have had or currently have...what is one thing you really don't like about it?**

**Why don't you like that thing?**



## Three separate, but related, wellbeing buckets



## Three separate, but related, wellbeing buckets





## Three separate, but related, wellbeing buckets



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## Three separate, but related, wellbeing buckets



# What is stress?

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- > **I bet for many of you, you identified an aspect of your job that increases your STRESS**
  - Typical reaction to stress is resilience
  - Chronic stressors can influence reaction to traumatic events or even affect someone as a singular traumatic event would

Stress  Mental Health





**POSITIVE**

Brief increases in heart rate,  
mild elevations in stress hormone levels.

**TOLERABLE**

Serious, temporary stress responses,  
buffered by supportive relationships.

***TOXIC***

Prolonged activation of stress  
response systems in the absence  
of protective relationships.

# What's a Mental Illness?

A mental health condition that has a negative effect on the way an individual...



thinks



feels



and behaves

Being in an accident, such as a road traffic accident, or an accident at work.

Being the victim of violence, such as being physically or sexually assaulted, imprisoned or tortured.

Witnessing violence towards another person, or witnessing death.

What is it?

**Trauma**

# A wide range of events can potentially cause trauma

## Abuse

- experiencing
- witnessing

## Loss

- Death
- Abandonment
- Neglect
- Accidents
- War/disasters

## Chronic Stressors

- Poverty
- Racism
- Family with substance use disorder



# **There are many responses to a traumatic event**

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What is stressful to one person may not be stressful to another.

What is traumatic to one person may not be traumatic to another.

**What might cause one person to feel trauma from an event but not cause another person to feel trauma?**



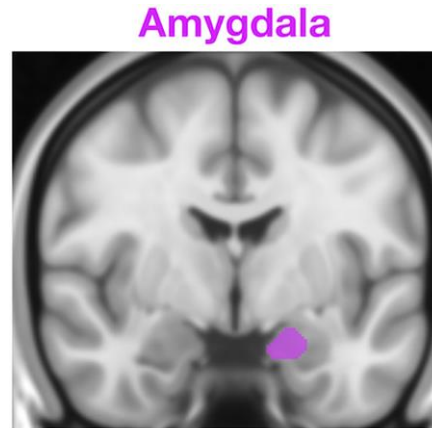
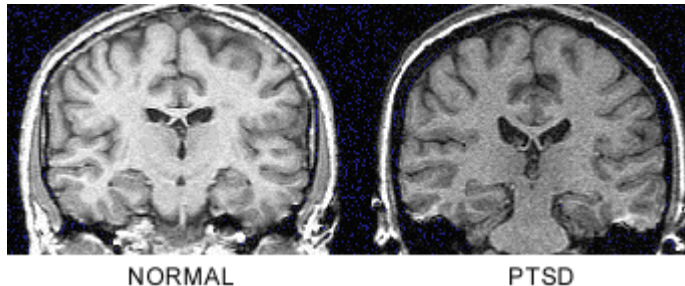
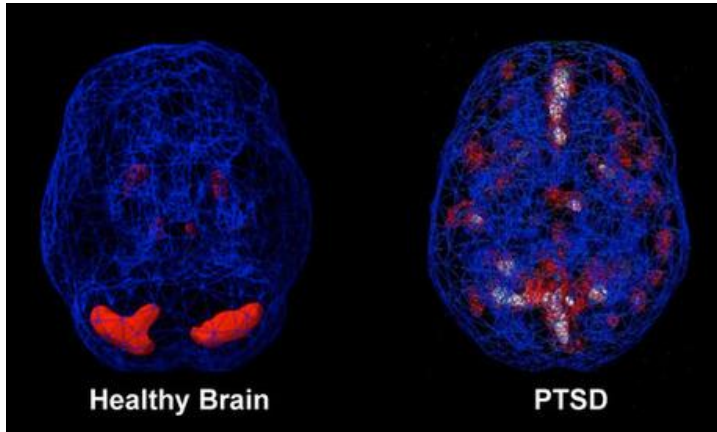
# We hear a lot about PTSD

## Acute Stress Disorder vs. Post-Traumatic Stress Disorder

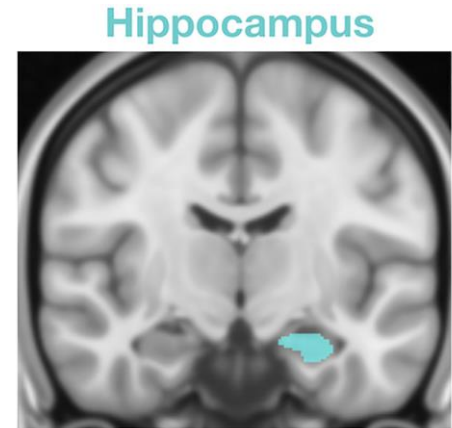


Condition	Onset	Duration	Symptoms	Treatment
<b>Acute Stress Disorder</b>	<i>0–28 days after the trauma occurs</i>	<i>Lasts between three days and four weeks</i>	<i>Depersonalization and derealization</i>	<i>Short-term psychotherapy and antidepressant medication</i>
<b>Post-Traumatic Stress Disorder</b>	<i>At least one month after the trauma occurs</i>	<i>Lasts at least one month and can persist for several years</i>	<i>Avoidance, heightened awareness and changes in mood or cognition</i>	<i>Long-term psychotherapy, medication and EMDR therapy</i>

# Fact: PTSD is a psychological injury more than a mental illness

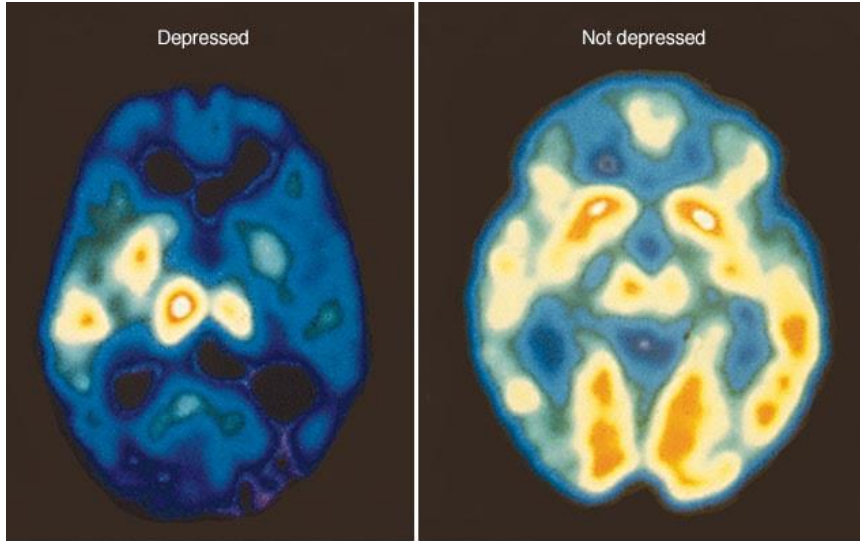


- Activation  $\uparrow$
- Volume  $\uparrow\downarrow$

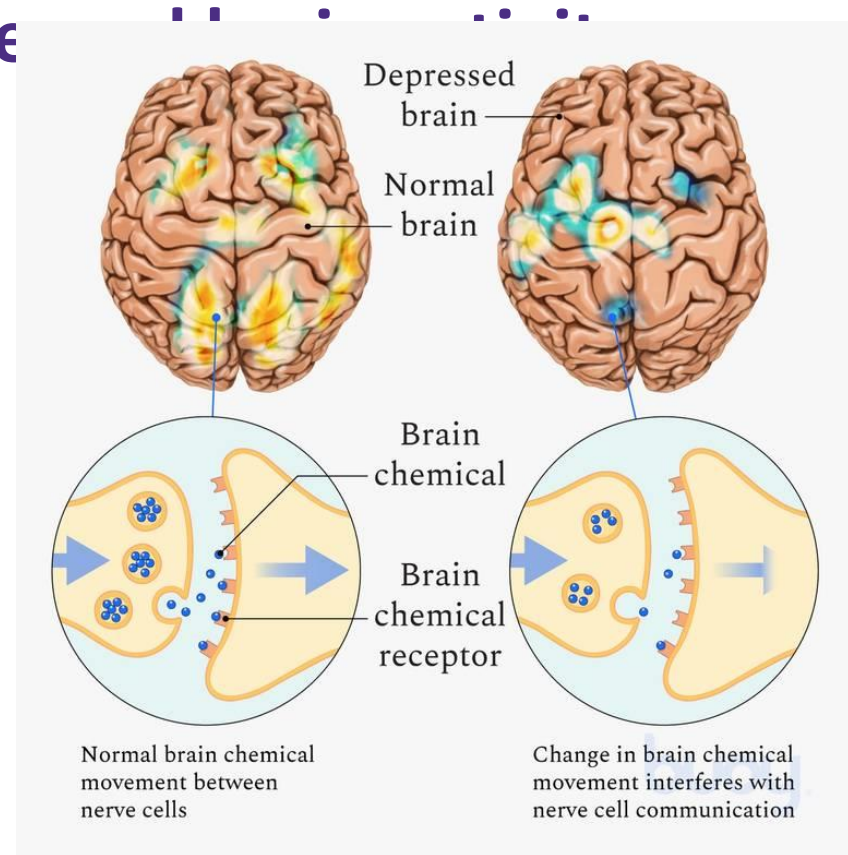


- Volume  $\downarrow$
- NAA  $\downarrow$
- Activation  $\uparrow\downarrow$

# Depression can lead to decre



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## Fact: Time is tissue

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- > The physical impact mental illness or trauma has on the brain can often be **repaired or reversed with appropriate mental health care**
- > **The sooner it is recognized and treated, the better the outcomes will be**

# How work environment can (negatively) impact wellbeing

## Personal Interactions

- Microaggressions
- Harassment
- Discrimination
- Unfair treatment
- Lack of support
- Feeling “othered”

## Work Practices

- Long/irregular hours
- Little control over work tasks
- High job demands
- Low pay
- Job insecurity
- Feeling unsafe

## Work Experiences

- Experience traumatic event
- Asked to undertake unethical behavior
- Injured at work

# Work environment also **POSITIVELY** impacts wellbeing!



**Money +  
access to  
benefits**



**Motivation**

**Social  
Interaction**



**Valuable  
purpose**



**W**

# Why should workplaces prioritize mental health & wellbeing?

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Poor mental health of a workforce is related to...

- > **Increased risk of injury**
- > **Poor decision-making**
- > **Reduced productivity**
- > **Reduced physical capability for daily functioning**
- > **Increased turn over**
- > **More challenging for workplace to recruit**



# How is all this related?

## Events at work

Past trauma

New  
trauma

Daily  
tolerable  
stressors

Daily toxic  
stressors

Chronic  
stressors

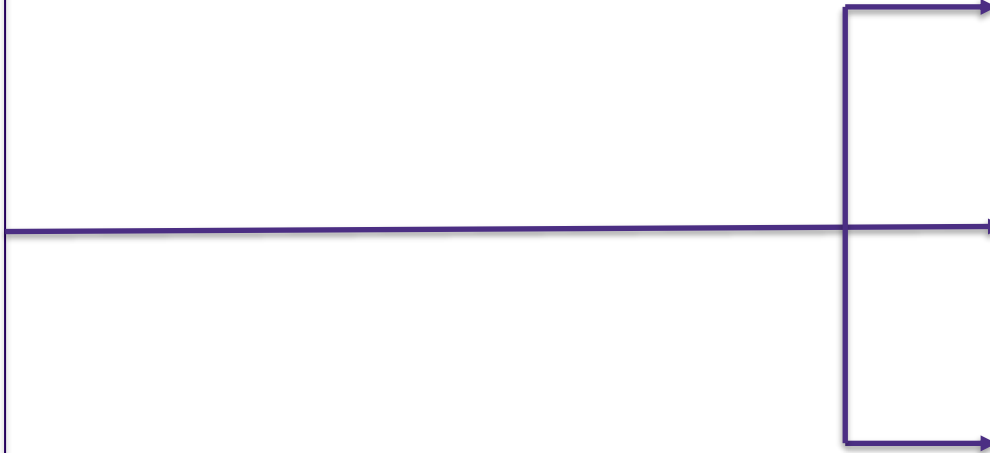
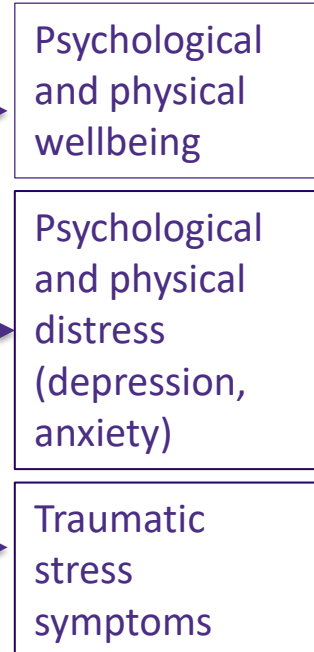


# How is all this related?

## Events at work



## Outcomes

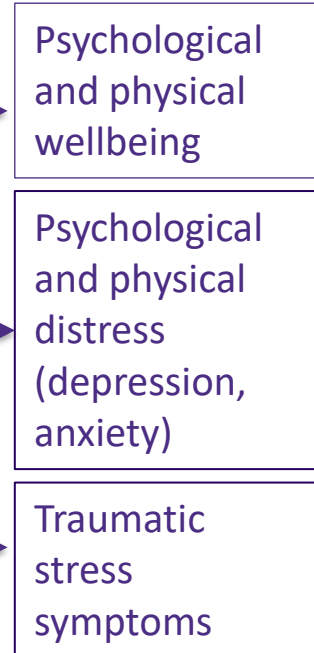


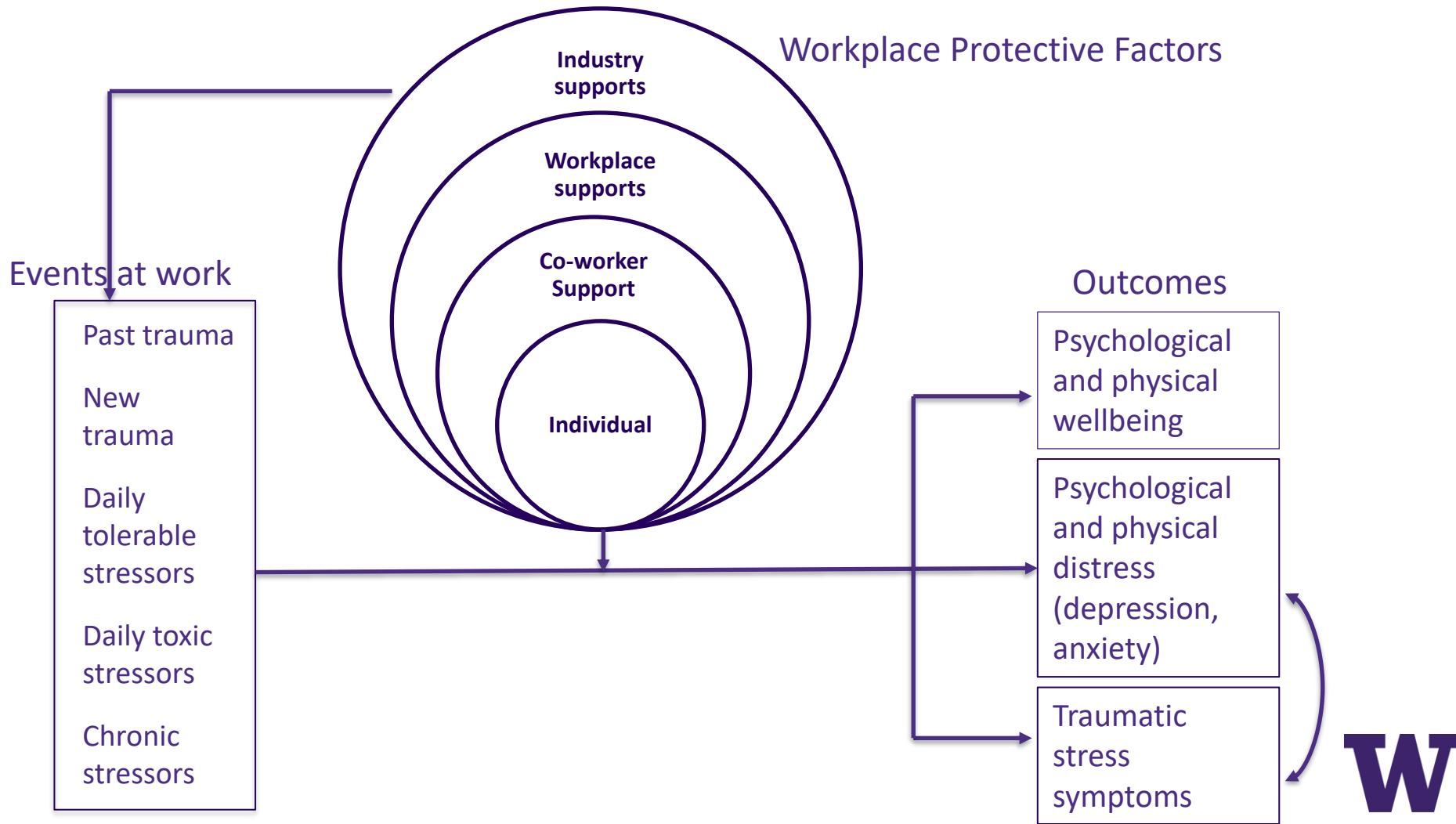
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## Events at work



## Outcomes

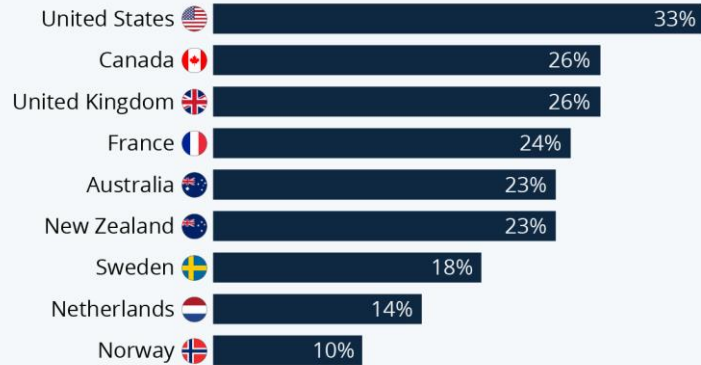




# How did COVID-19 impact population stress and mental health?

## Covid-19's Widespread Impact On Mental Health

Share of adults who experienced stress, anxiety or sadness that was difficult to cope with alone during the pandemic



n=8,259 (February to June 2020)  
Source: The Commonwealth Fund

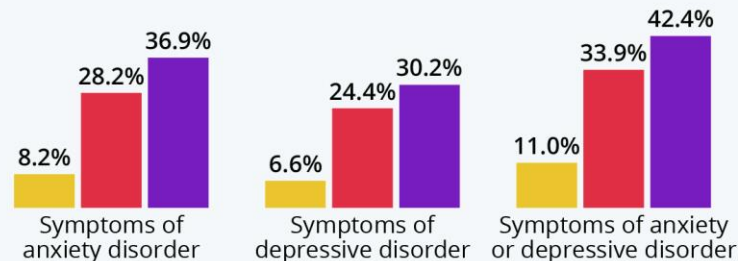


statista

## Pandemic Causes Spike in Anxiety & Depression

% of U.S. adults showing symptoms of anxiety and/or depressive disorder\*

■ January-June 2019 ■ May 14-19, 2020 ■ December 9-21, 2020



\* Based on self-reported frequency of anxiety and depression symptoms. They are derived from responses to the first two questions of the eight-item Patient Health Questionnaire (PHQ-2) and the seven-item Generalized Anxiety Disorder (GAD-2) scale.

Sources: CDC, NCHS, U.S. Census Bureau



statista



# US Mariner Survey



U.S. Department of Transportation  
Maritime Administration



## GOALS:

- > Characterize mental health outcomes, determinants, and barriers to accessing care in US mariners
- > Prioritize interventions to improve mariner well-being during COVID-19 and beyond

**SURVEY OPEN:** January 25—July 31, 2021



## Motivation for mental health survey

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- > Like the general public, mariners working during the pandemic faced COVID-specific stressors
- > Many of the job characteristics of mariners could be more stressful during the pandemic
- > Industry that requires high mental fitness—so mental health could be overlooked

“There are 2 certainties that are important to Mariners: When they can go to work, and when they can get off. Due to COVID this has been very hard for Mariners. In addition, Mariners are not involved in restriction to vessel decisions, it's made by people and management that don't work on ships and have no idea what being restricted to a ship for 133 days feels like or means. Little communication is given by management on the status of restrictions or what they are doing to help the crews, this leads to some crew feeling helpless and forgotten.”





## Brief overview

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- > 1,589 respondents as of July 31, 2021
  - Large majority identified as male, white, and between the ages 25-64
  - Only 349 were tug, tow, barge
- > Mariners self-reported good physical health
- > Mariners like their job and the people they work with
- > Many mariners **lack support/feel isolated**
- > Self-reported sleep quality and mental health has decreased during the pandemic

## Burden of mental health outcomes



Half of respondents had a high score for **at least one** of the 5 outcomes we assessed in this survey:

Depression, anxiety, PTSD, suicidal ideation, stress



## Trauma in U.S. Mariner survey

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- 49% (n=169) of tug, tow, barge mariners in our sample indicated they have experienced a traumatic event
- 47% of those (n=79) are being impacted by the traumatic event in their daily life

**That means 27% of total tug, tow, barge mariners in our sample likely have some symptoms of PTSD**



## Other mental health outcomes in tow, tug, barge



**Depression:** 18%

**Anxiety:** 20%

**Suicidal Ideation:** 7.4%

**High Stress:** 40%



# Burden of mental health outcomes

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- Women
- Mariners aged 25-34

# Burden of mental health outcomes

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- Women
- Mariners aged 25-34



- Cadets
- Unlicensed Engine—Unlimited
- Licensed Engineer Officer—Unlimited Horsepower
- Licensed Deck Officer—Unlimited Tonnage on oceans

# Burden of mental health outcomes

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- Women
- Mariners aged 25-34



- Cadets
- Unlicensed Engine—Unlimited
- Licensed Engineer Officer—Unlimited Horsepower
- Licensed Deck Officer—Unlimited Tonnage on oceans



- Great Lakes
- Military Sealift Command
- Offshore Energy Support
- NOAA Vessels
- Harbor Tugs (PTSD/SI)

As a Captain on a 500' ATB, with a well-known company, it distresses me the non-support we receive regarding Covid. I couldn't even get sanitizer or wipes. Being told to use bleach, which is impractical for wiping down electronic, microphones, etc. We are putting ourselves in harms way by flying, having Pilots and vendors onboard and have not even received a letter thanking or acknowledging us. Ironically, the office staff did, and they work from home! In my 40 years in the industry I've never felt more isolated and without company support then I do now.

I feel constant stress and anxiety about ships being laid up and work being lost due to the pandemic. Constantly worrying about people coming on board and not knowing how cautious or sanitary they have been about the pandemic.






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My experience may be different from others. I was fortunate to be surrounded by excellent shipmates. I feel that is what is most important when working on a vessel. An environment where people are professionally friendly and easy to communicate with because they can internalize the product of personal stressors.

# What aspects of vessel life related to poor mental health?

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- > Longer afloat tours
- > Isolation/worry about what is happening at home
- > Changes in protocols
- > Poor communication around mental health
- > Barriers to accessing mental health care
- > Lack of support/community on vessel
- > Poor sleep

## Mental Health Communications

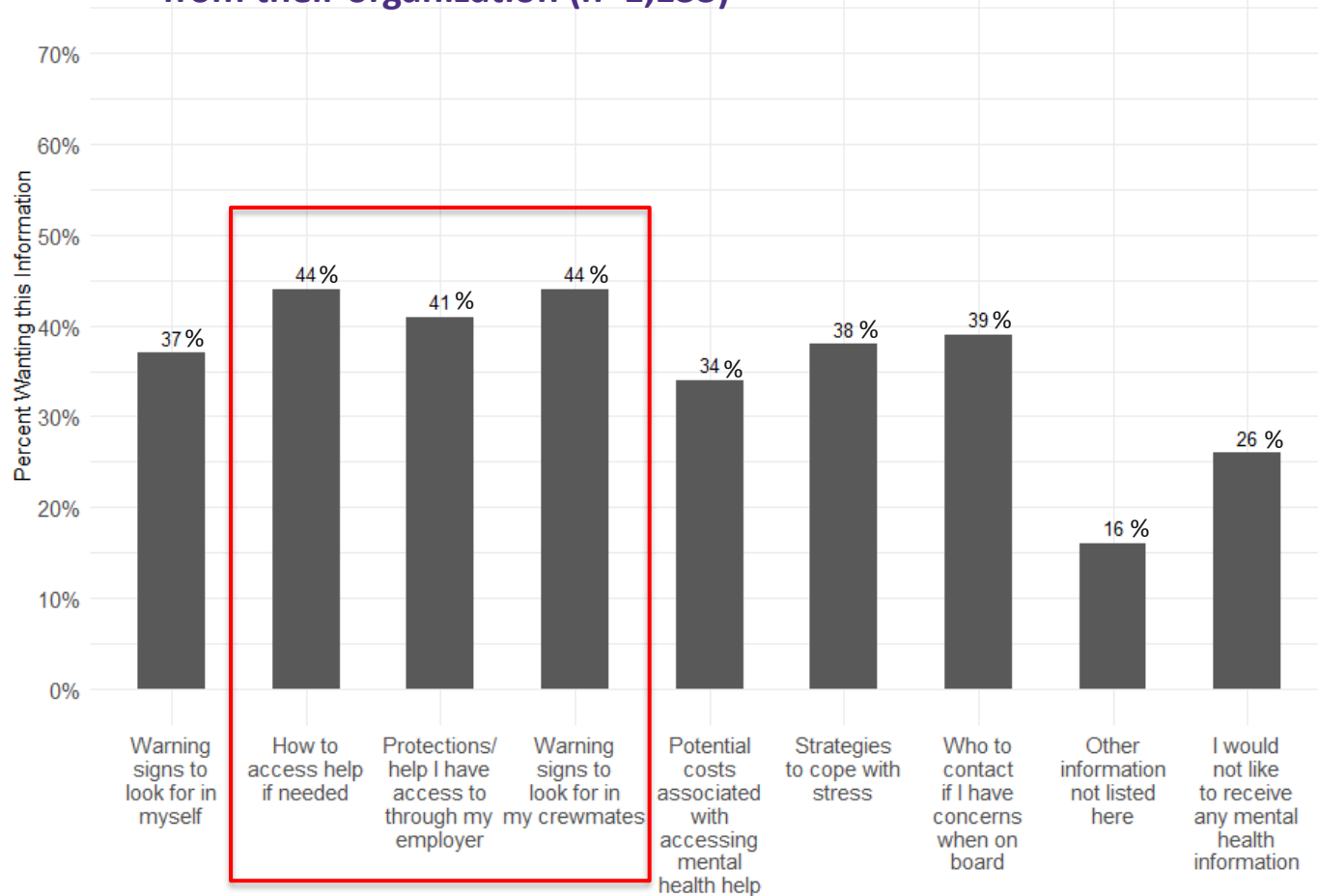


“Mental health training company sends out is not helpful at all as it does not pertain to mariners. In one of the [trainings] some of the tools they suggest to help with mental stress are: talk to your family, go outside for a walk.”


***\*\*65% of respondents reported NO communications or training on mental health during the pandemic.\*\****



## Mental health communication topics mariners would like to receive from their organization (n=1,133)



*Question: What types of mental health resource information would you like to receive from the organization you work for during the COVID-19 pandemic? Please check all that apply.*



There is a stigma with asking for mental health help in the industry. It is largely an attitude of forget your problems and work through it. Focus on your duties and you forget how you feel. There really are no resources available for mental health for commercial Mariners at sea. It has made me seek shoreside employment, and not want to return to sea until a solution is reached. My ship normally does a 90 day rotation, some crew were there 6-8 months. It was the only time in my life I've truly experienced hopelessness. I'm truly surprised there have not been major accidents or incidents due to mental health, and fatigue of crews when everyone is just trying to hold it together.



## Barriers to accessing care

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“Mental health care is a literal joke on board. There are no accommodations made while on board. Even when management explicitly states that mental health care accommodations should and will be made, it is made clear by senior officers that any request will be denied and seen as negative behavior.”

***\*\*Nearly 70% of respondents said they would not be able to start or maintain mental healthcare while aboard a vessel.\*\****



## Barriers to accessing mental health care

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- > Lack of consistent internet/phone (55%)
- > No privacy on board to talk to someone (45%)
- > Concerns about USCG credential (45%)
- > Not how I'd want to spend my off time (32%)
- > Don't know how to find a provider (26%)

Talking to mariners across all credentials can help you learn what barriers are real and how to address them!



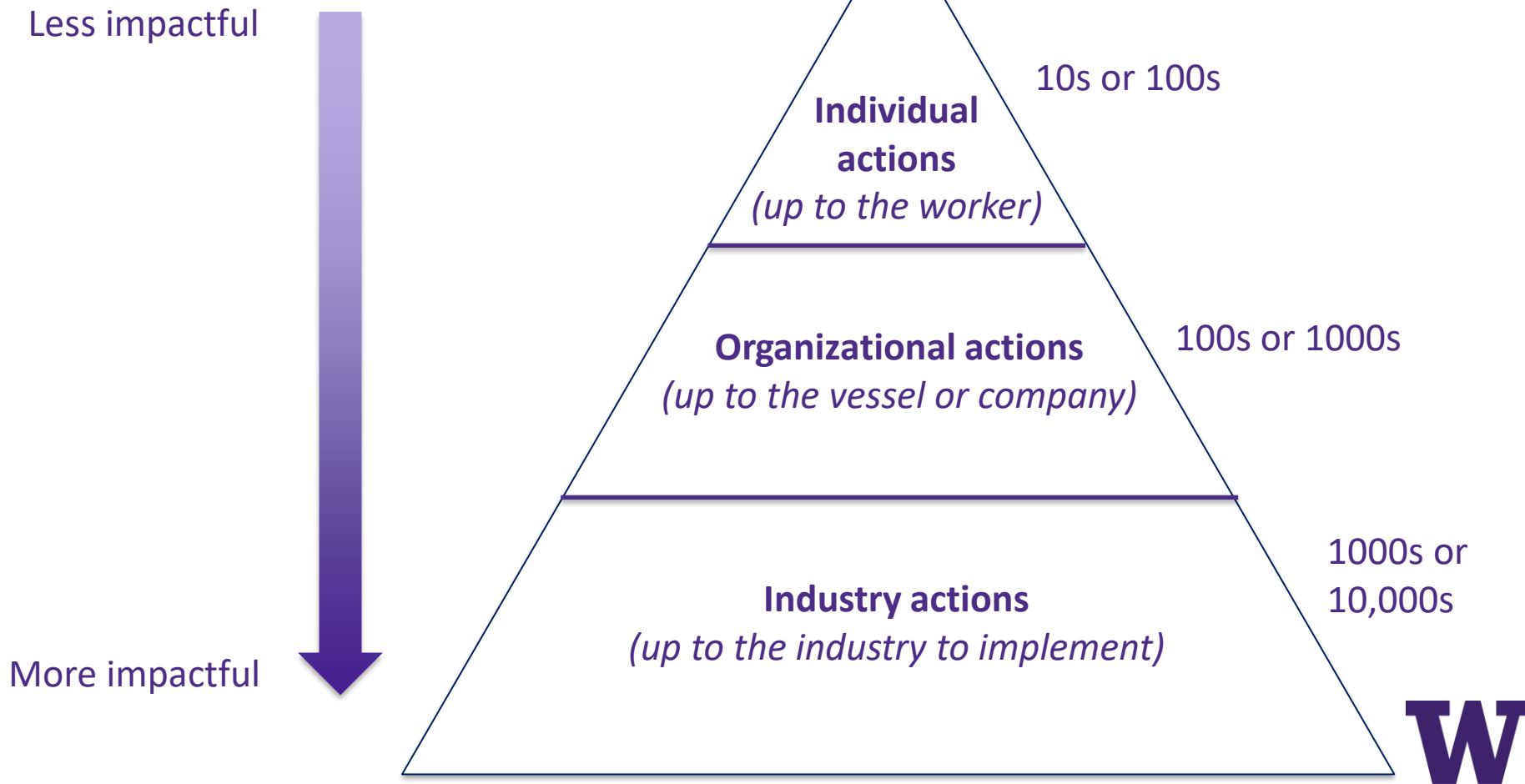


# How to improve workplace mental health and trauma response



There are three layers to consider...







## **My goals for employers:**

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- > Consider all levels of the pyramid**
- > Prepare and prevent**

# Roadmap

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Take  
inventory

Characterize  
Resources

Determine  
Holes

Prioritize  
Needs

Implement  
and evaluate  
interventions

# Roadmap

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Take  
inventory

- Existing stressors
- Sources of trauma that may occur
- Existing burden of mental illness
- Existing resources

# Surveying your workforce

Fig 1. GAD-2 screening tool

Over the last two weeks, how often have you been bothered by the following? (Use ✓ to indicate your answer)	Not at all	Several days	More than half of the days	Nearly every day
1. Feeling nervous, anxious, or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
NB. A score of >3 would signify clinically significant anxiety symptoms				

GAD-2 = two-item generalised anxiety disorder.

Source: Hughes et al (2018)


## The Patient Health Questionnaire-2 (PHQ-2)

Over the past 2 weeks, how often have you been bothered by any of the following problems?

	Not At all	Several Days	More Than Half the Days	Nearly Every Day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed or hopeless	0	1	2	3

# Roadmap

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Characterize  
Resources

- Where do they fall on the pyramid?



# Roadmap

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Determine  
Holes

- Are there resources that aren't appropriate
- Are there resources that aren't being utilized/workers don't know about
- Are there rungs of the pyramid which aren't being reached

# Roadmap

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What needs to be done that will be most impactful for your workforce:

- Increasing access to existing resources?
- Developing new resources/policies?
- What groups would most benefit?
- Don't forget about the pyramid!

# Roadmap

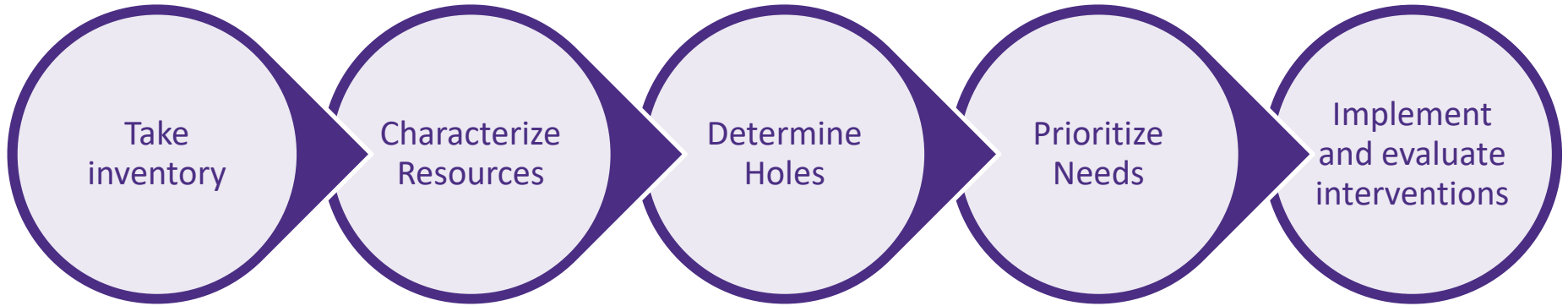
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Implement  
and evaluate  
interventions

- DO IT!
- Evaluate it

# Thinking about trauma response



Remember—what is not traumatic for one person, may be traumatic for another

# What organizational actions might help\*

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- > Vessel Support!
  - Mentorship, dedicated support person on the vessel
- > Increased time for rest and relaxation/scheduling changes
- > Access to exercise + healthy food
- > Reassurances that things *\*will\** return to normal, and what the off ramps are around COVID protocols
- > An opportunity to give input into vessel practices
- > Appropriate and frequent communication around mental health issues
- > Trainings around mental health

\*Not exhaustive, based on my survey work



# What is the evidence about mental healthcare?

- > **It works!!**
- > Telemedicine has been shown to be **as effective** as talking to a provider in person
- > **Need individual will + organizational supports**




# What might industry actions look like

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- > **Standardize best practices** across the industry
- > **Increased trainings and coursework** for mental health, tied to licensing and renewal, USCG vessel certification, etc.
- > **Frequently & robustly assess** mental health in the industry
- > **Increased privacy** on board for accessing mental healthcare
- > Develop healthcare that can be accessed **without internet/phone**
- > Setting an example **from the top**





It effects EVERYONE aboard and manifests itself in many different ways. Not enough people realize the issues this is causing. one person's drop in job performance for no apparent reason is common. Distracted individuals is very very common, not staying focused. The home front unknown is such a strong stressor.... Everyone deals with this differently, but everyone is stressed excessively due to it!!! Very difficult to provide relief while working due to the uncertainties when we can have regular crew changes. It is extremely difficult to convey the issue to the office and they try to understand but have no real concept since they are home.





## Dr. Marissa Baker - Assistant professor at the University of Washington

Dr. Marissa Baker is an assistant professor at the University of Washington (Seattle) in the Department of Environmental & Occupational Health Sciences. She studies how work impacts both physical and mental health, and works with employers and employees to implement interventions to improve worker well-being. She also focuses on the health and safety needs of underrepresented populations in the work environment. During the COVID-19 pandemic she worked with CDC, MARAD, and the CMTS to administer a survey to US Mariners about their mental health, needs, and experiences.



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Check out the final report:

<https://deohs.washington.edu/mariner-mental-health>



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