COVID-19 and worker fatigue:
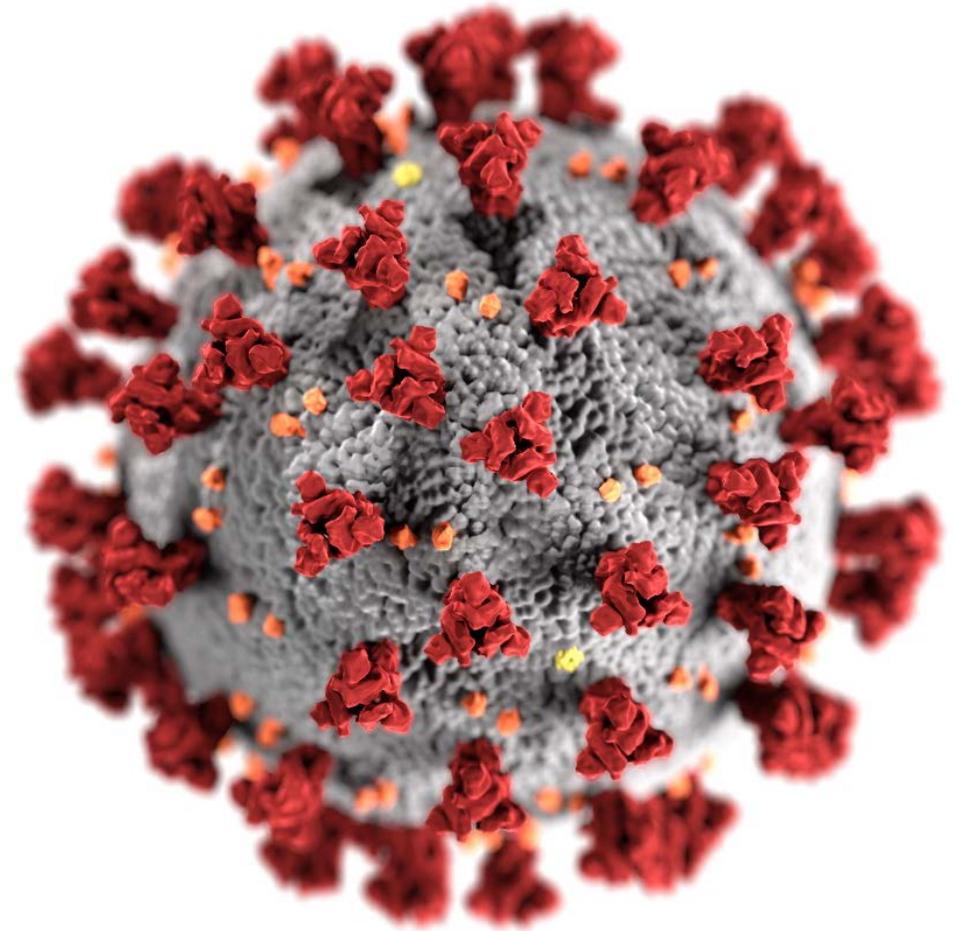Lessons learned and mitigation strategies
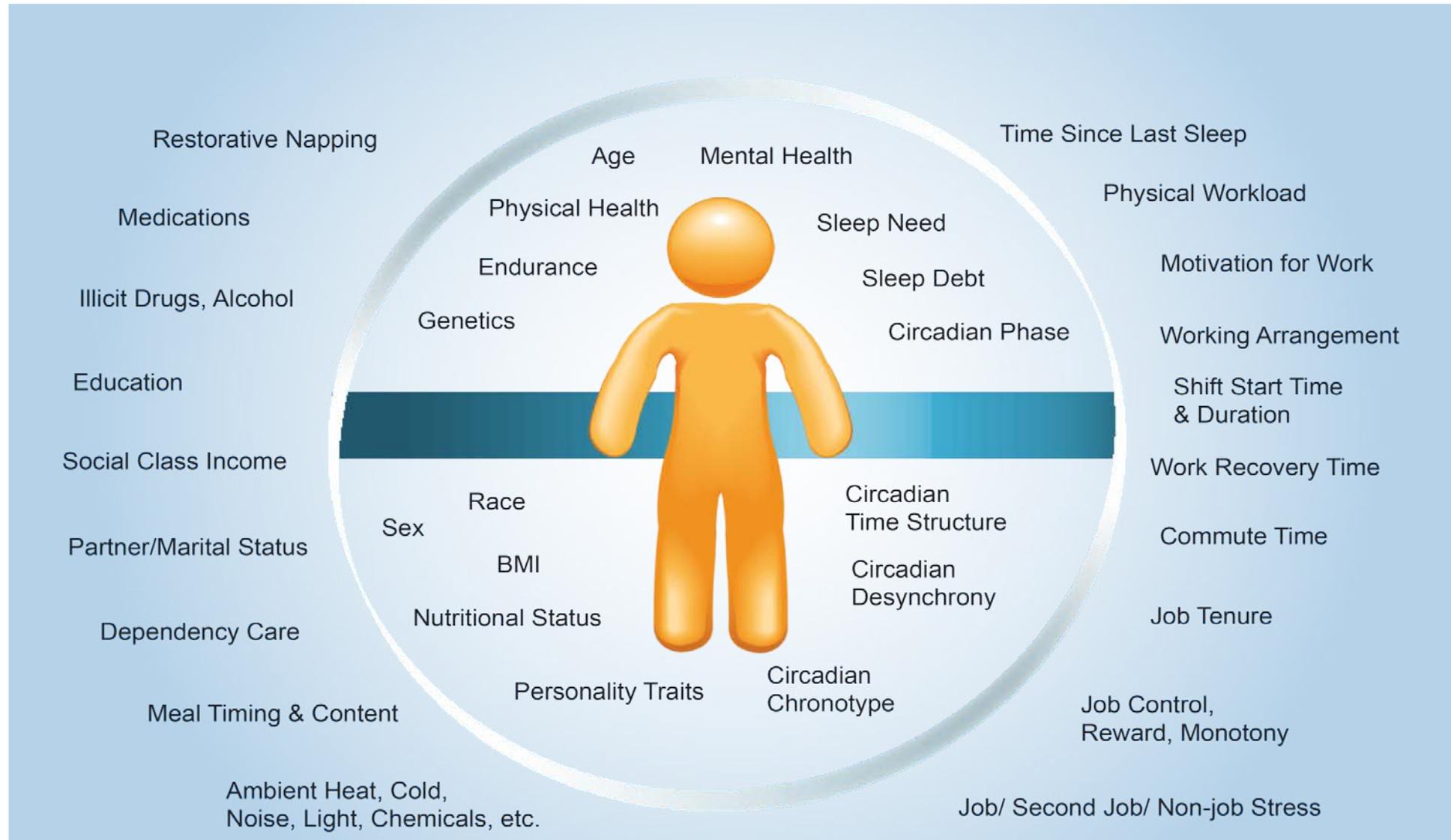
Imelda Wong, Ph.D.
National Institute for Occupational Safety and Health
Centers for Disease Control and Prevention
U.S. Department of Health and Human Services

cdc.gov/coronavirus

Potential factors of fatigue

Adapted from Di Milia L, Smolensky MH, Costa G, Howarth HD, Ohayon MM, Philip P. Demographic factors, fatigue, and driving accidents: An examination of the published literature. Accident Analysis & Prevention. 2011 Mar 1;43(2):516-32.

COVID-19 response:
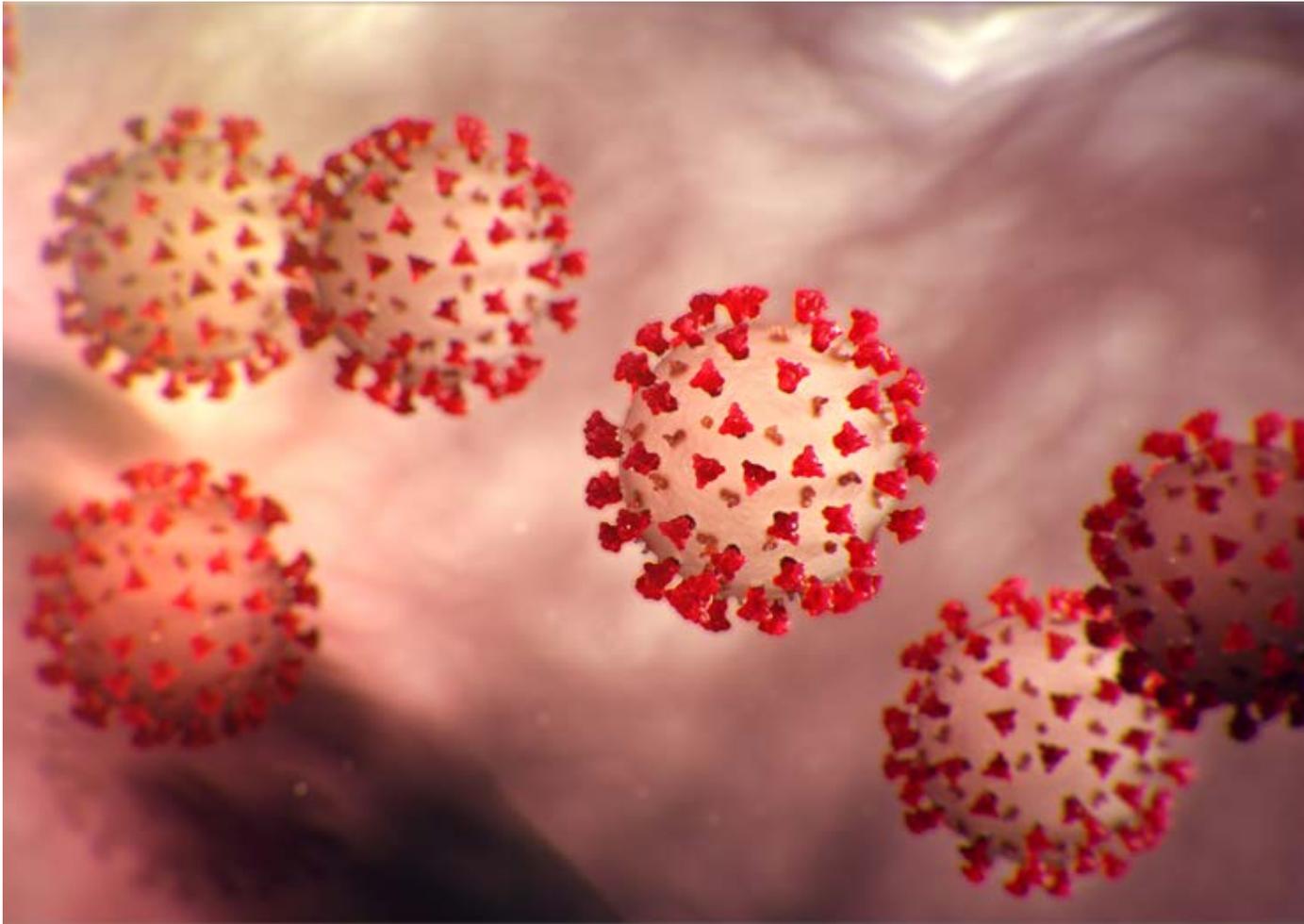## Notable events that affected workplaces

Photo credit: Centers for Disease Control and Prevention

March 13, 2020
COVID-19 declared as a national emergency

May 14, 2020
CDC publishes guidance for communities, work, and school

January 15, 2021
White House outlines vaccine rollout program

March 2020:
Declaration of a National Emergency

Credit: UN Women/Pathumporn Thongking

Credit: Joseph P. Chan / MTA New York City Transit

Credit: U.S. Air Force photo by Jill Pickett

Getty Images

Credit: Airman 1st Class Joseph Barron

Fatigue among all workers

Major changes in routines
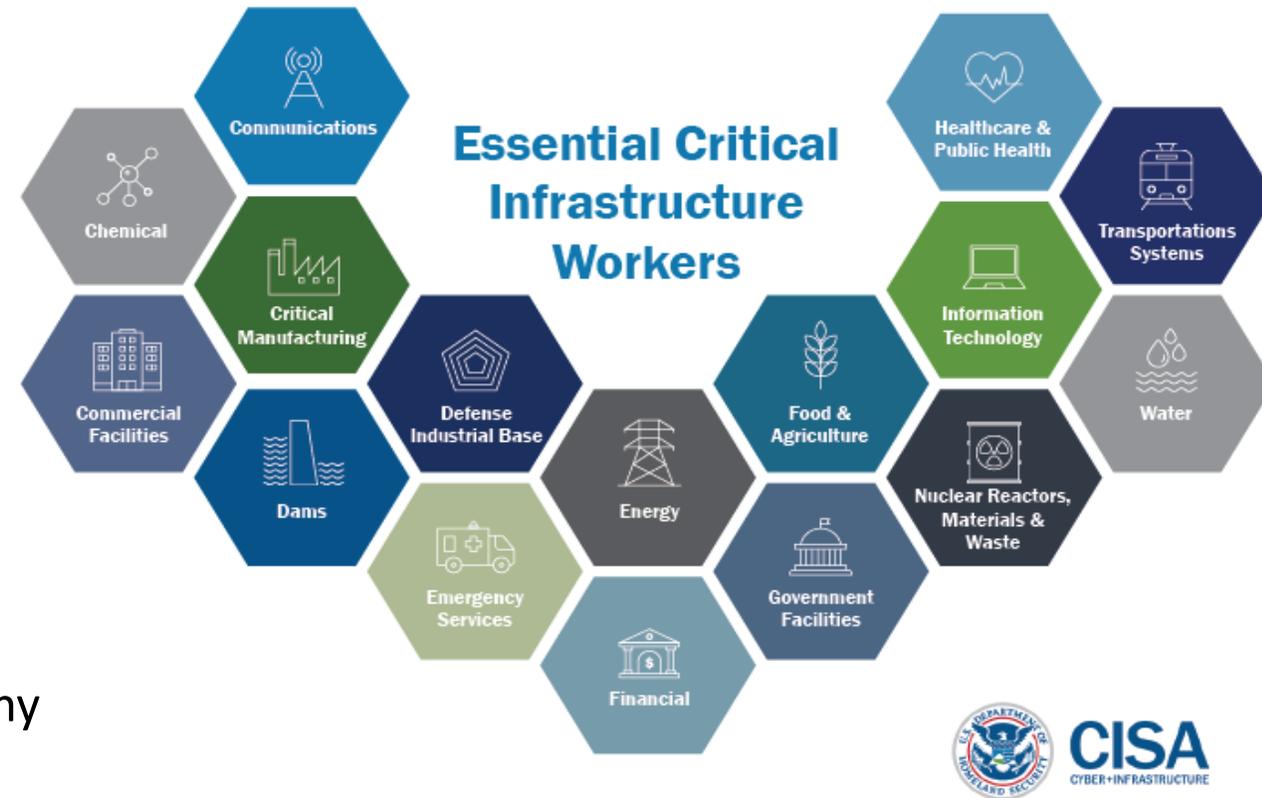
Uncertainty, worry, stress
- Compounds sleep problems, increases likelihood of insomnia

Sleep problems increase risk for mental health issues

Stay at home measures
- May limit access to daylight
- Binge eating, less exercise, and other unhealthy behaviors
- Effects on sleep health

Workplaces may adopt overnight shifts to accommodate rise in demands and hygiene/physical distancing practices


Essential Critical Infrastructure Workers

Communications
Chemical
Critical Manufacturing
Commercial Facilities
Defense Industrial Base
Dams
Emergency Services
Energy
Financial
Food & Agriculture
Government Facilities
Healthcare & Public Health
Information Technology
Transportations Systems
Water
Nuclear Reactors, Materials & Waste

CISA
CYBER+INFRASTRUCTURE

Risk for COVID-19 hospitalizations

Essential workers 1.6 times more likely to be hospitalized*

- Health care workers (7.7 x risk)
- Social Care (2 x risk)
- Transportation (2 x risk)

* Compared to non-essential workers
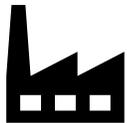
Occupational factors:

Manual labor

Night shift work

Long work hours not significant

Individual-level factors:

Male

Some non-White ethnicities

Lower socioeconomic status

Lower education levels

Overweight/obese

Prior smoker

Mutambudzi M, Niedwiedz C, Macdonald EB, Leyland A, Mair F, Anderson J, Celis-Morales C, Cleland J, Forbes J, Gill J, Hastie C. Occupation and risk of severe COVID-19: prospective cohort study of 120 075 UK Biobank participants. Occupational and Environmental Medicine. 2020 Dec 1.

Healthcare workers

New cases of depression, anxiety, insomnia

Poor sleep associated with anxiety and stress

Sleep quality decreased and persisted during and after isolation following work shifts

Exacerbation of mental health issues

Shaukat, N., Ali, D.M. & Razzak, J. Physical and mental health impacts of COVID-19 on healthcare workers: a scoping review. Int J Emerg Med **13,** *40 (2020).* https://doi.org/10.1186/s12245-020-00299-5

Yao B, Xing JY. First-line medical workers still exist sleep problems after leaving wards of coronavirus disease 2019. Sleep Med. 2020 Nov;75:536. doi: 10.1016/j.sleep.2020.07.040. Epub 2020 Aug 6. PMID: 32855055; PMCID: PMC7406423.

Commercial trucking

COVID-19 IMPACTS ON THE TRUCKING INDUSTRY

April 2020

Prepared by
The American Transportation Research Institute
ATRI American Transportation Research Institute
www.TruckingResearch.org

The OOIDA Foundation
OOIDA Foundation
RESEARCH • SAFETY • EDUCATION
www.OOIDA.com

Emergency Declaration Under 49 CFR § 390.23 No. 2020-002

- Truck drivers and support personnel declared as Essential Critical Infrastructure

- Relaxed hours of service rules with restrictions to ensure driver safety

Survey Results:

- Decrease in trip lengths. More local hauls (<100 miles)

- Less traffic congestion = higher travel speeds (within limits)

- Longer detention (e.g., loading/unloading) times

- Closed rest stops, harder to find parking

Working from home
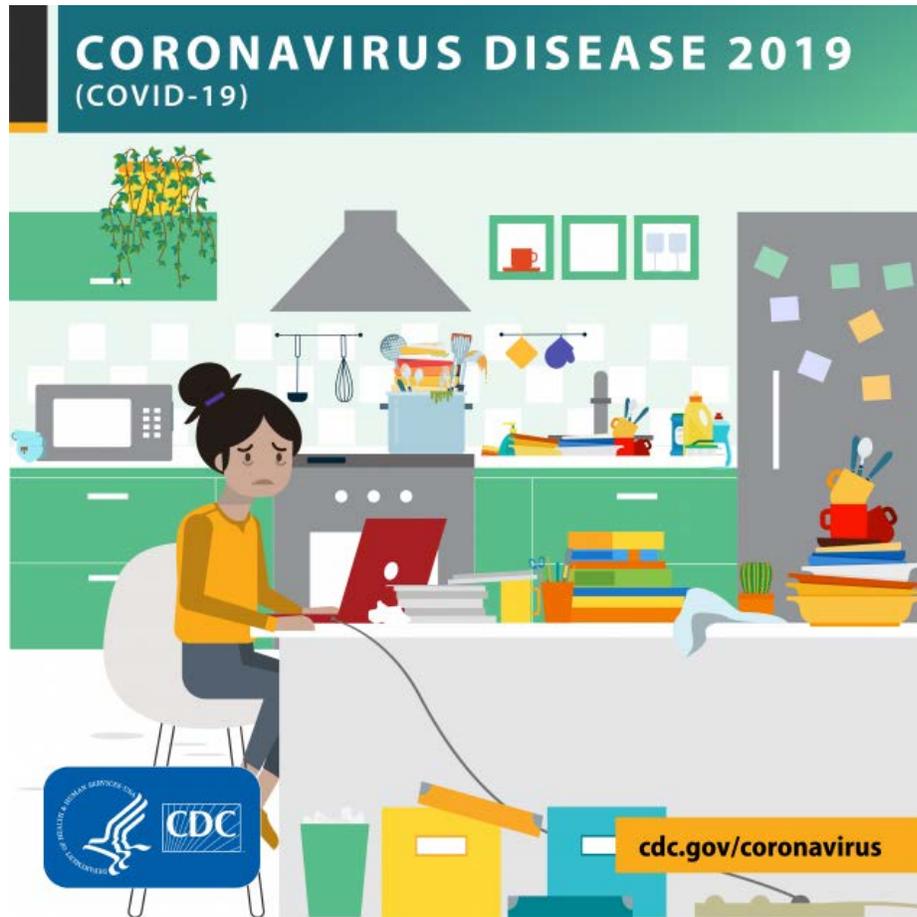
- Juggling dependent care

- Lack of work/life balance

- Increased in time in meetings, fragmented time

- Workplace isolation

- Awkward/non-ergonomic desk configurations

- Noisy conditions

May 2020:
Guidelines for safe workplaces

Changes in employment

US Labor force population

Largest job losses:
- Accommodations and food services
- Manufacturing
- Retail Trade
- Some public transport occupations

Biggest impact on low-paid workers

Precarious work/multiple jobs

Overnight shifts to accommodate physical distancing requirements and extra hygiene procedures

Understaffing and rise in work intensity

Healthcare workers: COVID-19 infections and fatalities

US Healthcare workers (May 2020):

| 69,761 cases | 368 deaths |

[1] https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/cases-in-us.html; *Date accessed: May 31, 2020*

Total reported cases of COVID-19 <u>infections</u> in Healthcare workers worldwide, May 2020
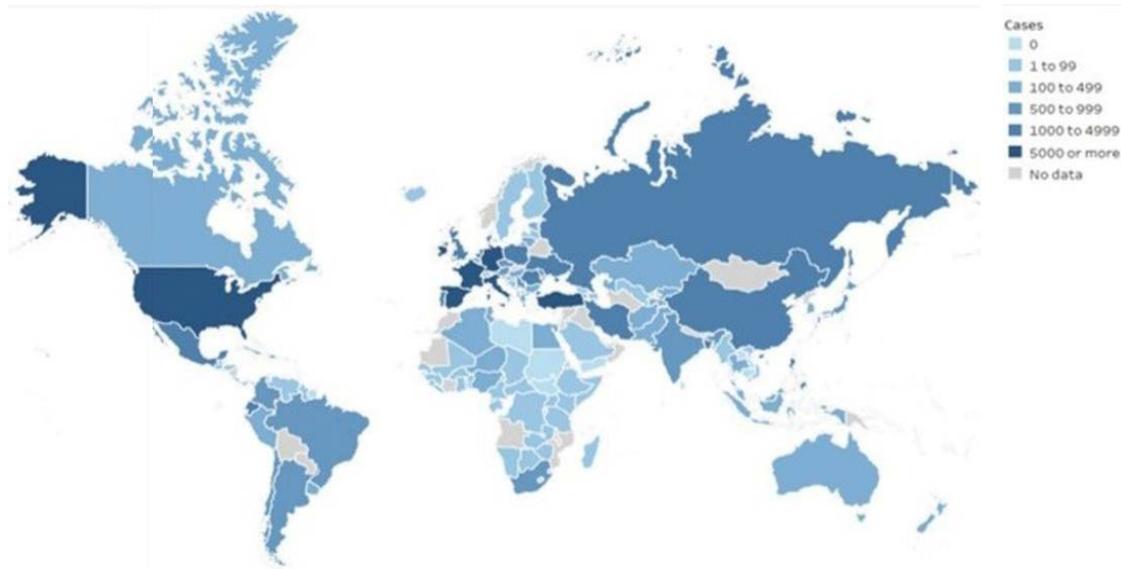
Total reported cases of COVID-19 <u>deaths</u> in Healthcare workers worldwide, May 2020

Bandyopadhyay S, Baticulon RE, Kadhum M, et al. Infection and mortality of healthcare workers worldwide from COVID-19: a systematic review. BMJ Global Health 2020;5:e003097.

Healthcare workers: determinants of fatigue

- Limited resources
- Overwhelming workloads
- Longer shifts
- Sleep disruptions
- Work-life imbalance
- Process inefficiencies
- Occupational hazards
- Financial instability

Sasangohar F, Jones SL, Masud FN, Vahidy FS, Kash BA. Provider Burnout and Fatigue During the COVID-19 Pandemic: Lessons Learned from a High-Volume Intensive Care Unit. Anesth Analg. 2020 Apr 9: Epub ahead of print

January 2021:
Vaccine rollout program

General strategies to reduce fatigue

Fatigue Risk Management Systems

Prevention measures

- Personal hygiene
- Psychological support systems
- Organizational policies & practices

Targeted, effective messaging

- Language level
- Translations
- Infographics

Tips to reduce fatigue while working from home

Employer practices

- Provide a clear plan, regular communication, flexibility, and necessary resources

Worker practices

- Set temporal and physical boundaries between work and nonwork

- Create focus times

- Keep a regular routine

- Maintain healthy practices including good sleep hygiene

- Engage in social connections (while maintaining physical distancing)

- Limit stressors

Altena, E. et al. 2020. Dealing with sleep problems during home confinement due to the COVID-19 outbreak: Practical recommendations from a task force of the European CBT-I Academy. Journal of Sleep Research, p.e13052.
Sleep Foundation www.sleepfoundation.org/sleep-guidelines-covid-19-isolation
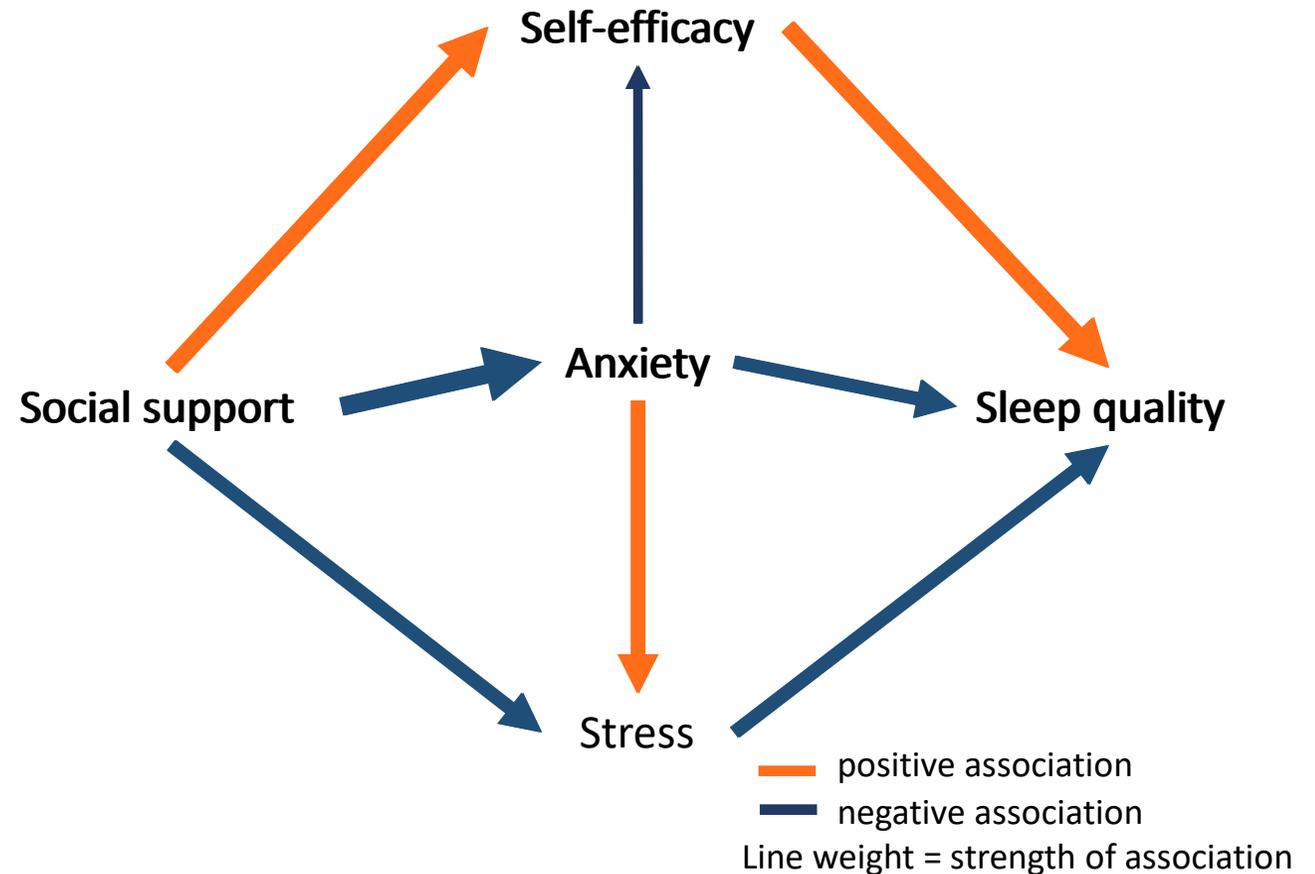
Becker PM. Overview of Sleep Management during COVID-19. Sleep Medicine. 2021 Apr 24.

Lessons learned: healthcare workers

Possible long-term psychological implications and fatigue

Strategies to prevent burnout, occupational stress, and fatigue

- Coordination of responses, including institutional collaborations

- Structured training on large-scale disasters

- Increased staffing

- Raising awareness and self-assessment of fatigue and reporting to management for timely intervention

Self-efficacy

Social support

Anxiety

Sleep quality

Stress

positive association
negative association
Line weight = strength of association

Figure adapted from Xiao 2020: The Effects of Social Support on Sleep Quality of Medical Staff Treating Patients with Coronavirus Disease 2019 (COVID-19)

Leadership through crisis: Fighting fatigue pandemic in health care during COVID-19

*"Leadership that **goes beyond** organisational efforts of mitigating fatigue through **mandated working hour limits** alone are needed. A process to **facilitate identification, mitigation and prevention of fatigue** is likely to be best suited."*

Whelehan DF, Algeo N, Brown DA. BMJ Leader Published Online First: 2021 March.
doi:10.1136/leader-2020-000419

NIOSH COVID-19 resources: stress and fatigue

Promoting productive workplaces through safety and health research / **NIOSH**

COVID–19 Information for the Workplace

General Information for Businesses

General-Business_small_businessbanner

https://blogs.cdc.gov/niosh-science-blog/2020/04/02/fatigue-crisis-hcw/
https://blogs.cdc.gov/niosh-science-blog/2020/06/29/sleep-hwd/
https://blogs.cdc.gov/niosh-science-blog/2020/06/12/covid-19-stress/
https://blogs.cdc.gov/niosh-science-blog/2021/01/13/covid-19-fatigue/
https://www.cdc.gov/coronavirus/2019-ncov/hcp/mental-health-healthcare.html
https://www.cdc.gov/coronavirus/2019-ncov/community/mental-health-non-healthcare.html
https://www.cdc.gov/coronavirus/2019-ncov/hcp/managing-workplace-fatigue.html

Science Blogs:

▪ Managing Fatigue During Times of Crisis: Guidance for Nurses, Managers, and Other Healthcare Workers

▪ Improve Sleep: Tips to Improve Sleep When Times are Tough

▪ COVID-19 Stress Among Your Workers? Healthy Work Design and Well-being Solutions are Critical

▪ COVID-19 and Workplace Fatigue: Lessons learned and Mitigation Strategies

Fact Sheets:

▪ Healthcare Personnel and First Responders: How to Cope with Stress and Build Resilience During COVID-19 Pandemic

▪ Employees: How to Cope with Job Stress and Build Resilience During the COVID-19 Pandemic

▪ What Workers and Employers Can Do to Manage Workplace Fatigue during COVID-19

More to come …

Studies:

    Responder organizations and COVID-19: Coping with trauma and promoting resilience

    A Longitudinal Examination of Mental and Physical Health among Police Associated with COVID-19
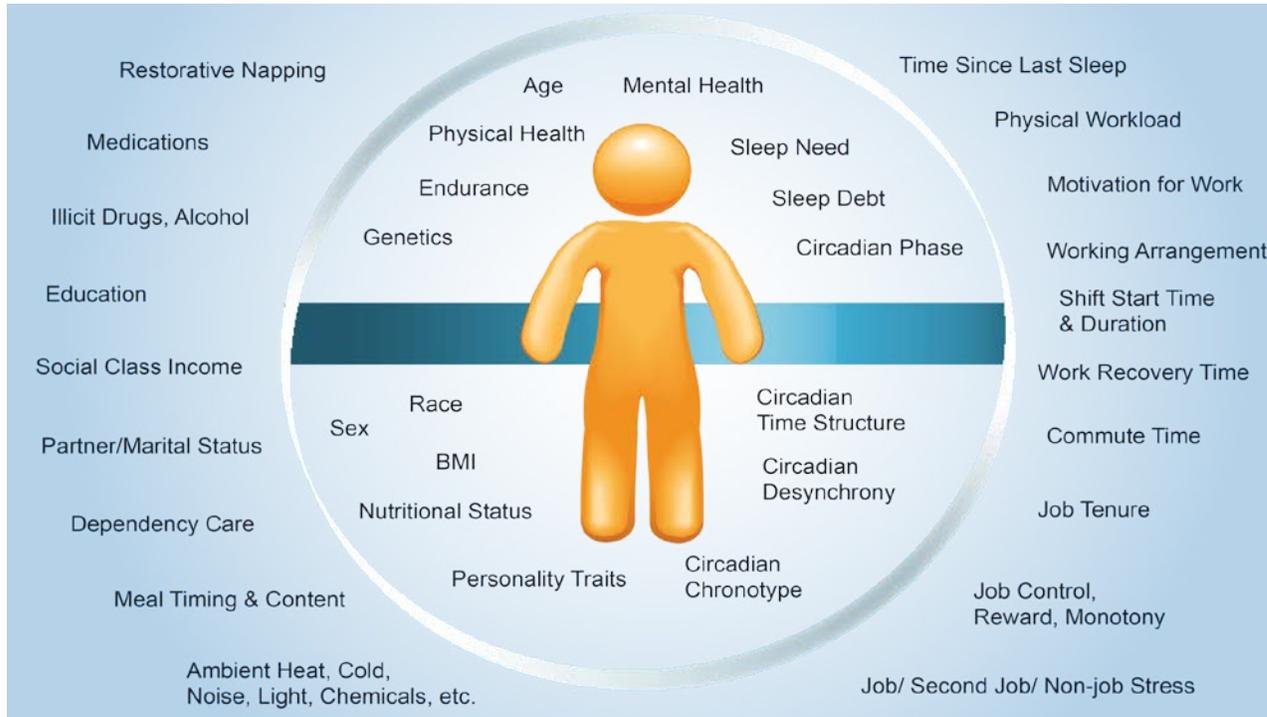
"Stress and Fatigue During Times of Emergencies" webpage

Short video / podcast for employers and workers to manage fatigue during challenging times

Identifying lessons learned will help us be better prepared for future crises

Key messages:
Consider the complete picture

Fatigue is more than hours of work and sleep

Work intensification, organization, and arrangements

Uncertainty / unknown
- "New normal"?
- Economic instability
- Long term physical effects of COVID-19?

Mental health / stress
- Fatigue is a symptom of mental health issues and it exacerbates existing mental health issues

Questions for the Board

What else should we do during this time of "rebuilding" to address workplace fatigue?

How can we gauge the effectiveness of our products and activities?

Thank you!

Center for Work and Fatigue Research

www.cdc.gov/niosh/topics/fatigue
cwfr@cdc.gov