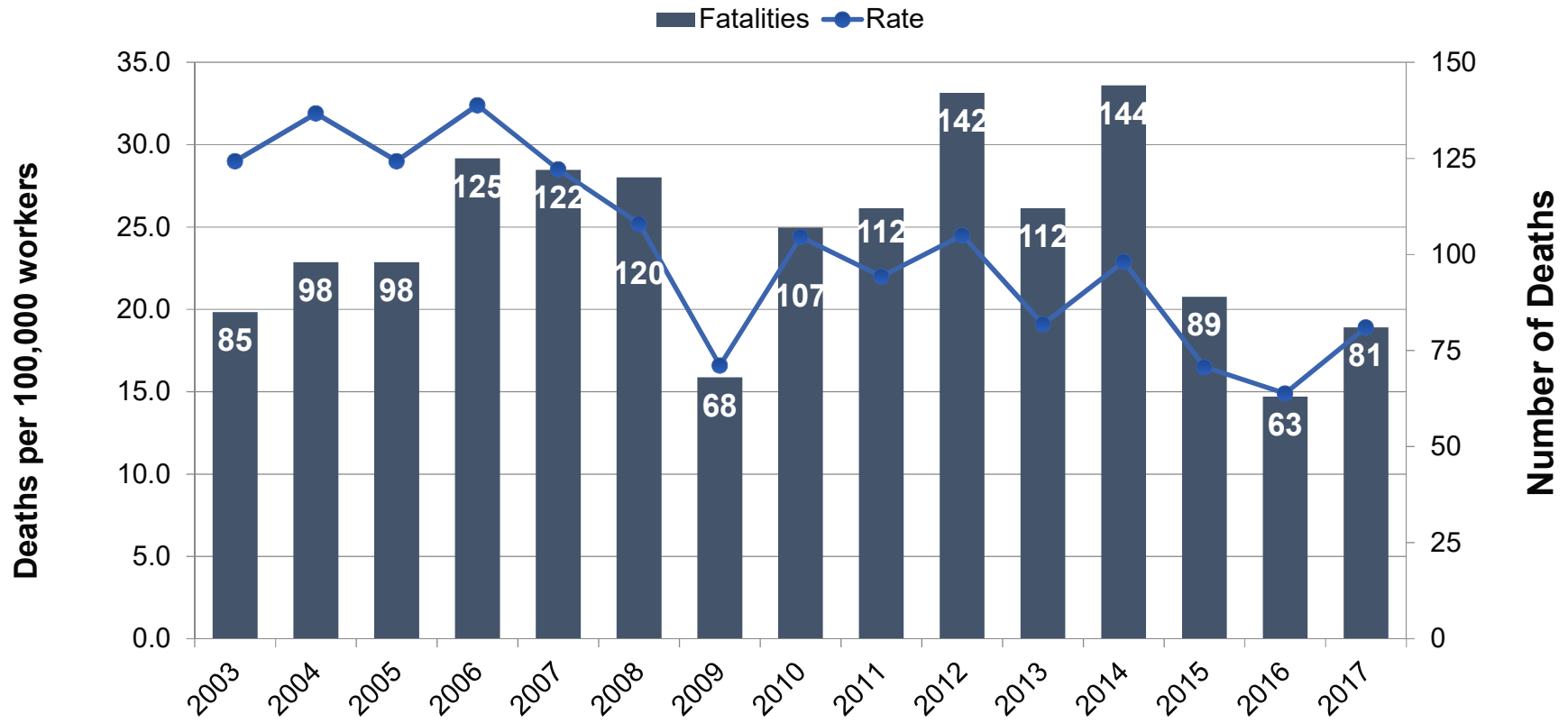
DriveSAFE

Driving hazard awareness training for oil and gas workers

EXTENSIONSERVICE

Number and Rate of Fatal Work Injuries
U.S. Oil & Gas Extraction Industry, 2003–2017

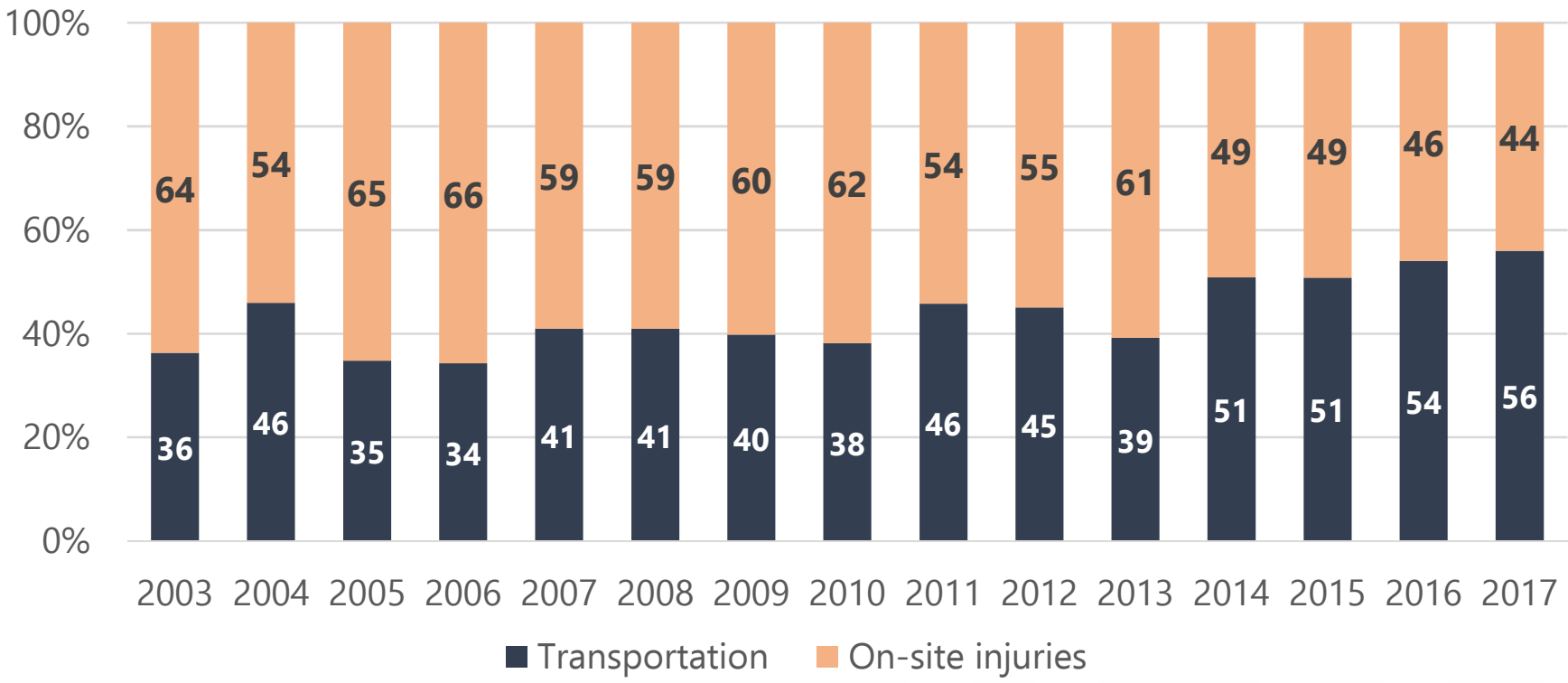


EXTENSIONSERVICE

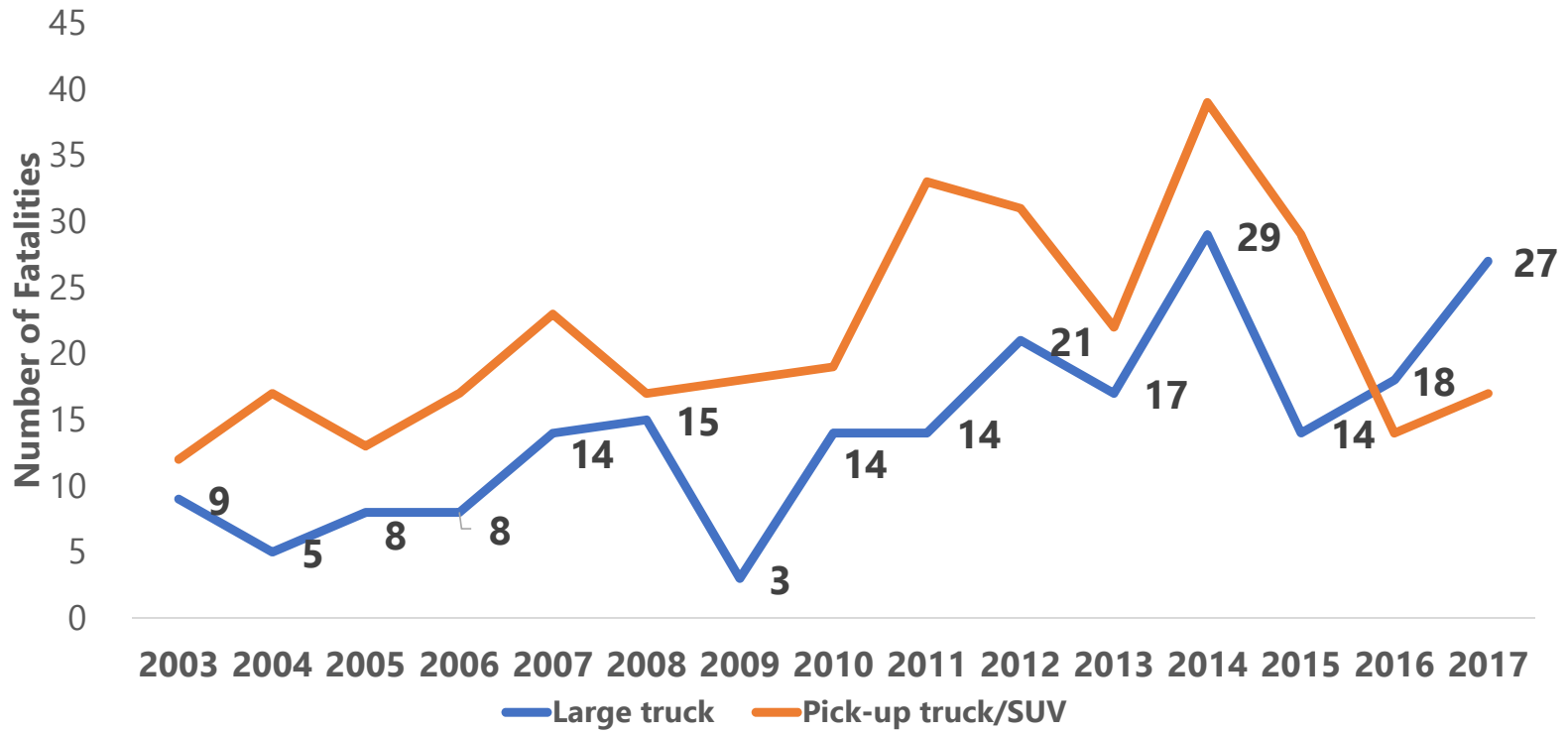
Note: Fatality counts from BLS Census of Fatal Occupational Injuries. Worker Estimates from BLS Quarterly Census of Employment and Wages. Rate per 100,000 workers per year. Includes NAICS 211, 213111, 213112..

N=1,566

Percent of oil and gas worker fatalities from transportation events is increasing



Oil and gas worker fatalities in large trucks becoming more common than pick-up trucks



Leading Causes of Fatality by Company Type
Oil and Gas Extraction Industry, 2017

Drilling Operations NAICS 213111

Event Type	No.	%
Transportation	6	50 %
Contact with Objects and Equipment	4	33 %
Other	2	17 %
TOTAL	12	

Support Activities NAICS 213112

Event Type	No.	%
Transportation	35	57 %
Contact with Objects and Equipment	11	18 %
Fires/Explosions	8	13 %
Falls	4	7%
Other	3	5%
TOTAL	61	

Oil and Gas Operators NAICS 211

Event Type	No.	%
Transportation	4	50 %
Other (non-reportable)	4	50 %
TOTAL	8	

Note: Fatality counts from BLS Census of Fatal Occupational Injuries

Out of 50 transportation fatalities to well servicing workers during 2016-2017[1]:

- **32** (64%) occupant of a semi/tractor-trailer
- **17** (34%) occupant of light-duty vehicles
- Speed was noted as a factor in **9** incidents
- **5** workers were pedestrian fatalities (3 on the well-site)
- Truck tires failed in at least **5** incidents
- Falling asleep at the wheel occurred in at least **3** incidents

Source: Fatal injury data were generated by NIOSH WSD with restricted access to BLS CFOI microdata.

DriveSAFE

Seatbelts

Attitude

Fatigue

Environment

Seatbelts

EXTENSIONSERVICE

Risk factors for oil and gas motor vehicle fatalities

Fatigue or distraction are involved in at least 1 in 5 fatal crashes

At least 40% of drivers and 60% of occupants not wearing their seatbelt

Speed: 60-70 mph results in a 32% increase in injury crash frequency, a 48% increase in severity, and a 64% increase in fatal crash frequency

Seat Belts Save Lives

- Seat belts saved an estimated 14,668 lives in 2016.
- If all passenger vehicle occupants 5 and older had worn seat belts, 17,124 lives, an additional 2,456 lives could have been saved in 2016.
- Ejection from the vehicle is one of the most injurious events that can happen to a person in a crash, seat belts are very effective in preventing total ejections.
- In fatal crashes in 2016, about 81% of passenger vehicle occupants who were totally ejected from the vehicle were killed.

Reducing the Risk

45%	For fatal injury to front-seat passengers
50%	For moderate or critical injury
60%	For fatal injury to light truck occupants
65%	For moderate or critical injury to light truck occupants

How to Properly Wear a Seat Belt


Myth No. 3
"It's safer to jump free of a crash than be restricted by wearing a seat belt."
Truck drivers have a better chance of surviving a potentially fatal crash if they are wearing a seat belt.

Seatbelt Observation

- Results

Discussion

- How can you encourage others to wear seatbelts at work?
- Who will you talk to about wearing seatbelts this week in your family?

Take Action

- Seatbelt Selfie Hashtag #wvudrivesafe
  - Take a photo of yourself, before moving, wearing your seatbelt and share on social media.

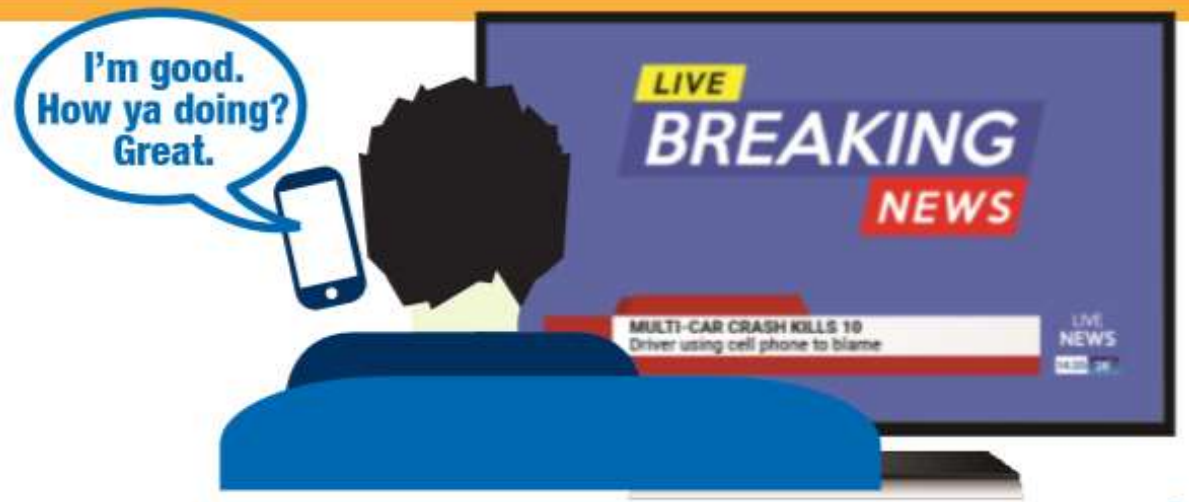
Attitude

EXTENSIONSERVICE

MYTH #1 Drivers can multitask

REALITY

The human brain **cannot do two things at the same time** – like watch TV and hold a phone conversation.



The same is true when driving and talking on your phone.
The brain switches between the two tasks which **slows reaction time.**

BOTH TAKE CONCENTRATION

MYTH #2 Talking on a cell phone is just like speaking to a passenger

REALITY

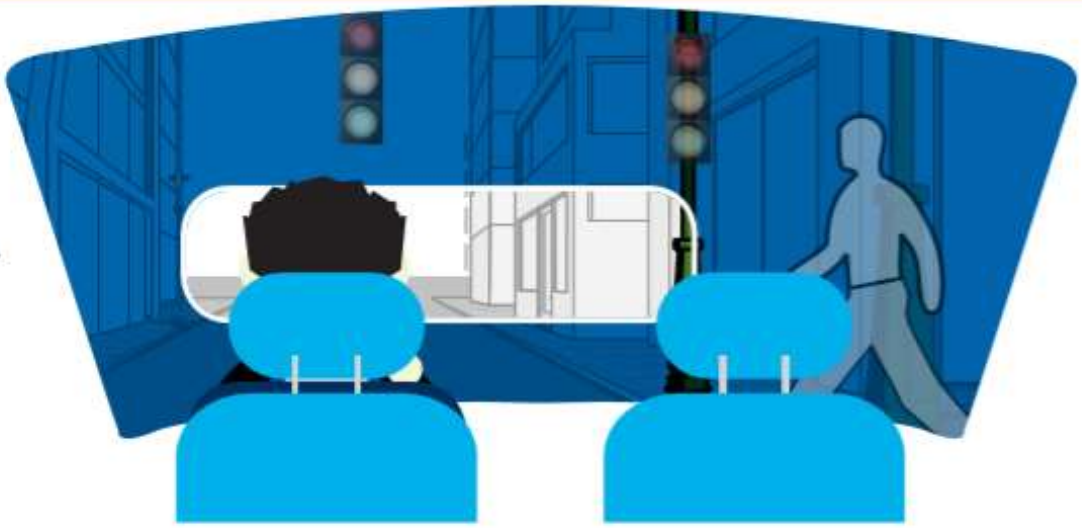
Adult passengers are also copilots. **They can alert drivers to traffic problems and help avoid crashes.**

People on the other end of phones **can't see what's going on!**

MYTH #3 Hands-free phone calls are safe while driving

REALITY

Drivers talking on cell phones **can miss seeing up to 50% of their driving environments,** including pedestrians and red lights.



MYTH #4 I only use my phone at stoplights so it's OK

REALITY

Even at stoplights, it is important to remain an attentive driver. For example, a AAA study shows that people are **distracted up to 27 seconds after** they send a voice text.

MYTH #5 Voice-to-text is safe while driving

REALITY

Voice-to-text is even more distracting than holding your phone.

You're mentally distracted by composing the message and visually distracted by common autocorrect errors.

GET YOUR FREE MATERIALS AT:

nsc.org/justdrive

Why are phones so distracting?

Texting while driving is especially dangerous because it combines all three types of distractions. Hands-free phones are not necessarily safer than hand-held devices.

Your brain has limited ability to perform two tasks at the same time.

When driving becomes secondary, you pay less attention to possible dangers on the road..

Eyes off the road

- Reading a text message
- Looking up directions
- “Rubbernecking” (i.e., craning one’s neck to get a better view) at a crash site
- Adjusting radio (i.e., song searching on spotify)
- Observing work (i.e., watching operations on site)


STOP

Distracted Driving

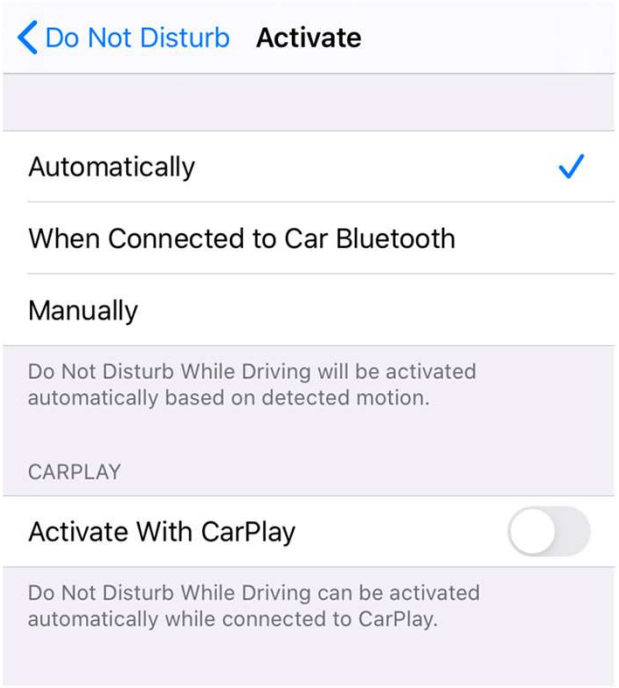
- Do not text or use a hand-held phone while driving. Further, avoid using hands-free phones as much as possible – even if your employer allows them.
- Pull over in a safe location if you must text or make a call.
- Make necessary adjustments (e.g., adjust controls, program directions) to your car before your drive.
- Do not reach to pick up items from the floor, open the glove box, or try to catch falling objects in the vehicle.

Distracted Driving

- Avoid emotional conversations with passengers, or pull over in a safe location to continue the conversation. For normal conversation, passengers in the vehicle can often help lower crash risk for adult drivers.
- Focus on the driving environment — the vehicles around you, pedestrians, cyclists, and objects or events that may mean you need to act quickly to control or stop your vehicle.

DriveSAFE Pledge

Do Not Disturb Challenge



Talk While Writing

- 3 volunteers needed
- 2 cell phones
- 1 piece of paper/pen

Discussion

- What are the leading causes of distraction in your vehicle?
- How can you encourage others to drive without distraction?

Fatigue

EXTENSIONSERVICE

Oil and Gas Workers:

How to Prevent Fatigued Driving at Work

Oil and gas workers drive long distances from their homes, lodging sites, and equipment yards to reach well sites that are often in remote areas. The combination of long trips with long shifts can result in fatigue.

Fatigued (drowsy) driving is a major cause of crashes in this industry. Crashes are the leading cause of death for oil and gas extraction workers. **This fact sheet gives drivers information about fatigue and tips to stay safe behind the wheel.**

The need for sleep

Fact: The average adult needs 7 or more hours of sleep per night.[1]

How much sleep do oil & gas workers* get?

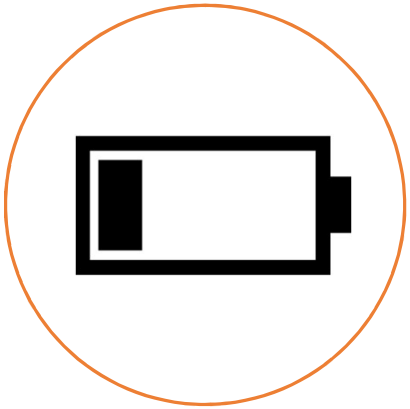
45% get less than 7 hours per night.[2]

*Extraction occupations

[1] Watson et al [2015]. Recommended amount of sleep for a healthy adult: a joint consensus statement of the American Academy of Sleep Medicine and Sleep Research Society. Sleep 38:843-844.
[2] Shockey TM, Wheaton AG. Short Sleep Duration by Occupation Group — 29 States, 2013–2014. MMWR 2017;66:207–213.

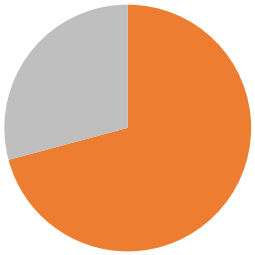
Effects of fatigue and sleep deprivation

- Overlooking or skipping tasks
- Slower reaction times
- Impaired decision making
- “Tunnel vision”
- Inability to adapt to changing information
- Reduced short-term memory
- “Microsleeps”

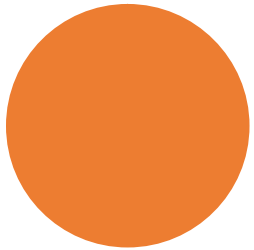


Acute vs Chronic Fatigue

Acute: Short-term sleep deprivation

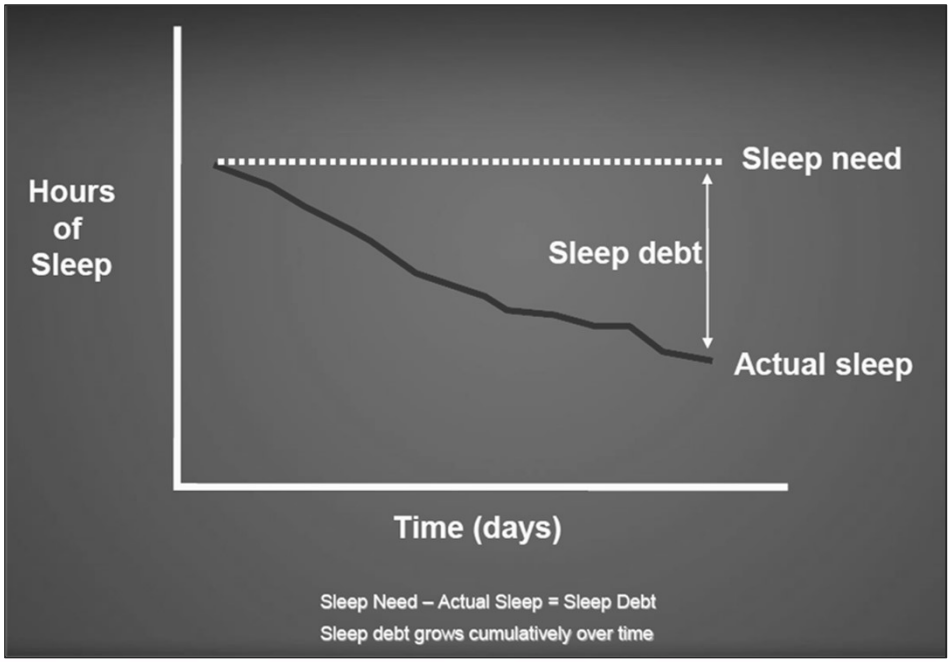


17 hours awake = **.05 BAC**



24 hours awake = **.10 BAC**

Chronic: Long-term "sleep debt"



Dawson & Reid, 1997; Williamson & Feyer, 2000; Falleti et al. 2003; Arendt et al. 2005; Howard et al., 2007; Yegneswaran & Shapiro, 2007; Elmenhorst et al., 2009

Operational factors in the oilfield

- Long work shifts and shiftwork
- Remote work
- On-call work and being called out early
- Disconnect between corporate policy and practices
- Conflicts with priorities of operators and dispatchers
- No good place to rest

Sleep and fatigue: Culture and beliefs

The industry

- Meeting operational and contractual expectations
- Pride in getting the job done
- Perception that admitting fatigue is a sign of weakness

Our society

- Sleep is the first thing we give up
- Functioning without sleep is a badge of honor
- Fatigue is not seen as impairment

WV DUI Simulator

Discussion

- When are you the most tired while driving?

- Share a fatigued driving story or situation with the group you've experienced or heard about.

Environment

EXTENSIONSERVICE

Transportation

[Updated: 05/31/2017]

JSA

Workers and equipment must be transported to and from well sites. Wells are often located in remote areas, and require traveling long distances, often over secondary and lease roads, to get to the sites. Highway vehicle crashes are the leading cause of worker fatalities in the oil and gas extraction industry. Roughly 4 of every 10 workers killed on the job in this industry are killed as a result of a highway vehicle incident.

Transporting Personnel

Personnel driving to and from well sites are subject to a variety of hazards, including fatigue, distracted driving, weather conditions, and speeding.

Transporting Equipment

Equipment and materials must be transported to the well site. Key operations include loading the equipment, securing the load, transporting it to the site, and unloading the equipment.

Vehicle Operation at the Well Site

At the well site, a variety of vehicles are used to move equipment and materials.

All-Terrain Vehicles (ATVs) and Utility Task Vehicles (UTVs)

ATVs and UTVs are used in a number of applications in the industry.

Resources

- Kyla Retzer, NIOSH
- Rosa Rodriguez-Acosta, NIOSH
- Stephanie Pratt, NIOSH
- Ryan Hill, NIOSH
- National Safety Council
- Industry Supporters