Cell Phone Use & Driving
A Traffic Safety Epidemic

making our world safer

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Our Mission
The National Safety Council saves lives by preventing injuries and deaths at work, in homes and communities, and on the roads through leadership, research, education and advocacy.

Motor vehicle crashes
- 1 million people have died in motor vehicle crashes in the last 25 years
- 35,000 deaths each year in the U.S.
- Leading cause of on and off-the-job unintentional deaths in the U.S.
- Leading cause of death for people 5- to 35 years old
- Cost to society = $100 billion per year
- Society appears to have grown complacent, accepting these deaths and injuries
- Safety engineering has made significant advances
Motor vehicle crashes

Vehicle maintenance factors
  - Critical reason for crash - 2% of the time
Environmental factors
  - Critical reason for crash - 2% of the time
Human error
  - Critical reason for crash - 94% of the time

Source: NHTSA Traffic Safety Facts, February 2010

Driving distractions

The Science of Distraction
  Visual: eyes on road
  Mechanical: hands on wheel
  Cognitive: mind on driving

- Visual and mechanical distractions are short lived -
  cognitive distractions last much longer
- Much more than "eyes on the road, hands on the wheel"

Selective attention / switching

1. No such thing as "multi-tasking" When brains are
   overloaded by too cognitive tasks, people switch
   attention (without recognizing it)

2. Make one task "primary" and the other "secondary" 
   Cognitive attention to driving becomes secondary to
   a phone conversation

3. When driving is a secondary task for the brain, 
   driving becomes impaired
   Impairment takes several forms, including
   Inattention blindness and tunnel vision

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"Tunnel Vision"

Crashes and cell phones

Risk - how risky is the distraction
- Reading: 8.4x
- Searching for a moving object: 8.8x
- Turning around in a seat: 8.8x
- Talking on a cell phone: 4x
- Texting: 6x

Prevalence - how often is it happening
- Manipulating a wireless device: 1.7%
- Talking on a cell phone: 9%

Crashes and cell phones (2012)

- Minimum of 341,000 crashes
  - 6% of all crashes, involve texting
  - 1.2 million crashes per year
  - 21% of all crashes, involve cell phone conversations

27% of all crashes involve cell phone use
What we know about cell phone use and driving

Role of Mobile Phones in Motor Vehicle Crashes Resulting in Hospital Attendance
Susan F McFarlane, Erik F Evenson, Anne T McCall, et al. - 2004

- Likelihood of crashing increases by 4x
- Risk was raised irrespective of whether or not a hands-free device was used

Hands-free and crash risk

Hands-free devices do not reduce crash risk:
- National Safety Council
- National Transportation Safety Board
- World Health Organization
- Insurance Institute for Highway Safety
- Governors Highway Safety Association

- 30+ studies reported substantial negative effects of cell phone use on driving for hands-free and handheld phones
- Smaller effects in reaction time, speed, headway and lateral lane position, for hands-free and handheld phones

Free download at: thebrain.nsc.org

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What we know about cell phone use while driving

Comparison of the Cell Driver and Drunk Driver
Stryer, Drews, et al. University of Utah - 2004
- No difference between handheld and hands-free
- Cell phone distracted drivers have slower reaction times and were more likely to crash than drivers with a .08 BAC

What we know about cell phone distraction

A Decrease in Brain Activation Associated With Driving
Carnegie Mellon University, Center for Cognitive Brain Imaging - 2009

Result
The parietal activation associated with driving decreases substantially (by 37%) with sentence listening.

Driving Alone

Driving with Sentence Listening

L R
Misperceptions

If talking on a cell phone is so dangerous, and cell phone use has exploded in the last 10 years, why haven't we seen a spike in crashes and fatalities?

Crashes have actually decreased 9% since 2000 and fatalities have also trended downward.

*How can this be?*
**Misperceptions**

It's no more dangerous than talking to a passenger
- A passenger in a vehicle is aware of the driving situation and can even serve as an additional look-out
- The phone carries a certain obligation of immediacy

There isn't enough evidence to prove that using a cell phone while driving causes crashes
- Difficult to collect crash data
- Much evidence, few statistics
- An absence of statistics does not prove or even indicate the absence of a problem

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**Misperceptions**

What about voice texting? That must be safer than typing texts, right?

- Two recent studies from AAA Foundation for Traffic Safety and Texas A&M found same result
- Voice texting is more distracting than typing texts
- Drivers look away more
- It took longer to send a voice text

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**Misperceptions**

What about 2-way radios? Navigation? Books on tape?

- Simplex communication occurs in one direction only
- Shorter duration and less complex
- Never input navigation while the vehicle is moving
- Voice directions may be less distracting than reading a map and street signs
- Not a two-way, duplexed conversation. Easier to disengage.
Putting it all together
Motor vehicle crashes are the leading cause of death for a large percentage of our population
• Human error causes the vast majority of crashes
• Cell phone drivers four times more likely to be involved in a personal injury crash
• Reaction times slower than .08 BAC
• Hands-free as dangerous as handheld
• Inattention blindness
• 37% reduction in spatial processing in the part of the brain used for the task of driving
• Cell phone use involved in 26% of all crashes
  Voluntary compliance is difficult

The Science of Attention
• Eighty years of cognitive neuroscience
• Top down vs. bottom up attention
• Cocktail party effect

Virtual tap on the shoulder

NSC Leading the Way
National Safety Council NEWS
NTSB Recommends:

1. Ban the nonemergency use of portable electronic devices (other than those designed to support the driving task) for all drivers;
2. Use the National Highway Traffic Safety Administration model of high visibility enforcement to support these bans; and
3. Implement targeted communication campaigns to inform motorists of the new law and enforcement, and to warn them of the dangers associated with the nonemergency use of portable electronic devices while driving.

December 12, 2011

OHSA and distracted driving
October 4, 2010

"To combat the threat of distracted driving, we are prepared to act quickly. When OSHA receives a credible complaint that an employer requires texting while driving or who organizes work so that texting is a practical necessity, we will investigate and where necessary issue citations and penalties to end this practice."

David Michaels, PhD, MPH

Sample cell phone policy
Company employees may not use cellular telephones or mobile electronic devices while operating a motor vehicle under any of the following situations, regardless of whether a hands-free device is used:

- When employee is operating a vehicle owned, leased or rented by the Company.
- When the employee is operating a personal motor vehicle in connection with Company business.
- When the motor vehicle is on Company property.
- When the cellular telephone or mobile electronic device is company owned or leased.
- When the employee is using the cellular telephone or mobile electronic device to conduct Company business.

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Companies with policies

- ExxonMobil
- DuPont
- Halliburton
- Shell
- Chevron
- BP
- Enbridge
- AstraZeneca
- Spectra Energy
- CA Office of Traffic Safety

Just a sample - no national database of companies with policies

What about productivity?

Survey of AMEC employees one year after corporate cell phone driving ban

- 97% agreed talking on a cell phone impacts a person's ability to drive safely
- 96% felt responsible companies should discourage use of wireless communications while driving
- 65% did not experience a decrease in productivity as a result of the ban during work hours
- 81% reduced or quit using wireless devices while driving outside of work hours

Company cell phone policies

Survey of NSC member companies – August 2009

- 2,004 respondents
- 468 (23.3%) had bans that included both hands-free and handheld wireless communication devices
- 36.1% of NSC members who policies have plans in the next 12 months to create policies
- Only seven companies (1.5%) with policies reported a decrease in employee productivity
- 46 companies (19%) reported a productivity increase
Company cell phone policies

Survey of Fortune 500 companies — September, 2010
- 20% of Fortune 500 companies surveyed have total bans in place — estimated 2 million+ employees
- 22 percent of companies with total bans said they experienced decreased crash rates, and the same experienced decreased property damage, indicating the policies work
- Among those who responded and had total bans
  - 10 percent said productivity increased
  - 22 percent said productivity remained the same
  - 52 percent don’t yet know impact on productivity
  - 7 percent said productivity decreased

Company cell phone policies

Why no decrease in productivity?
- Most calls are not as “business critical” as assumed
- Every employee and every company “adapts” (e.g. trip planning)
- Employees less stressed — they make better decisions
- Drivers no longer take time from non-driving staff

Employer liability

$21 million: A stepfather and received the award for the driver who killed his wife, after a jury found the driver negligent for sending text messages while driving. The driver was convicted of vehicular homicide.

$21 million: A driver of a commercial vehicle was driving a tractor-trailer and struck a pedestrian who was crossing the street. The driver was charged with misdemeanor vehicular homicide.

$2 million: A driver of a commercial vehicle was driving a tractor-trailer and struck a pedestrian who was crossing the street. The driver was charged with misdemeanor vehicular homicide.

$10 million: A truck driver was convicted of vehicular homicide for a collision that killed a pedestrian. The driver was sentenced to 45 years in prison.

$8 million: A truck driver was convicted of vehicular manslaughter for a collision that killed a pedestrian. The driver was sentenced to 25 years in prison.

$6 million: A truck driver was convicted of vehicular manslaughter for a collision that killed a pedestrian. The driver was sentenced to 20 years in prison.

$3 million: A truck driver was convicted of vehicular manslaughter for a collision that killed a pedestrian. The driver was sentenced to 15 years in prison.

$1 million: A truck driver was convicted of vehicular manslaughter for a collision that killed a pedestrian. The driver was sentenced to 10 years in prison.

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CEO Selling Proposition

1. Employee cell phone use while driving is a significant and growing safety threat to our employees and the driving public.
2. It has also become a significant financial risk and liability.
3. If a total ban policy is properly implemented and supported, there will not be a negative effect on productivity, customer service or employee morale.

Cell Phone Policy Kit

- Executive communication
- Employee education campaign
- Campaign rollout plan
- Sample policy
Enforcement
- Standard crash review includes review of cell records
- Peer-to-peer enforcement
- Technology

Technology: may be best solution
- Signal jamming
  - Jamming device in vehicle
  - Limited geographic reach
  - Currently illegal
- Smartphone app without vehicle integration
  - Uses phone's GPS to trigger "driving condition"
  - Sends calls to VM, stores texts and emails
- Smartphone app with vehicle integration
  - Sensor plugged into vehicle OBD port
  - Communicates "driving" to phone via Bluetooth
- Wireless network solution
  - "This client" on smartphone signals network of "driving condition"
  - Network applies call management tools

Public support
Quinnipiac University
- 24x24 U3 Veece
- November 2010, +/- .02
- By a 53% - 34% margin, American voters support a federal ban on cell phone use while driving, even while using a "hands-free" device

National Life Insurance "On Your Side Survey"
- 1008 US drivers
- August 2009, +/- .03
- 80% support ban on texting or emailing
- 87% support a ban on all cell phone use while driving
Public support

According to the National Highway Traffic Safety Administration (NHTSA), current scientific research indicates that using a wireless phone while driving degrades a driver's performance, whether with a hands-free or hand-held wireless phone. NHTSA advises that the safest course of action is to refrain from using a wireless phone while driving.

Consider turning your phone off or allowing calls to go to voicemail while driving—for your safety and that of those around you.

- Verizon website

Public Positions

- Wireless Carriers – generally supportive
- Auto and Consumer Electronics Industries

"Eyes on the road and hands on the wheel."

"Talking - be it interacting with passengers or on the cell phone - has a mixed effect on driving safety. In fact, in the context of cognitive loading (i.e., divided attention), talking on cell phones can actually reduce crashes. Evidence shows that so-called 'cognitive distractions' aren't much of an issue but physical distractions are."

Source: Ford Motor Company

Takeaways

- We need full attention for the task of driving - cognitive distraction is real - Multitasking is a myth
- Hand-free is not risk-free
- Risk exposure is what makes cell phone use the biggest threat
- A total ban on employee cell phone use while driving is "best safety practice" and your company's best defense against liability exposure.
Takeaways
- We need full attention for the task of driving - cognitive distraction is real - multitasking is a myth
- Hands-free is not risk free
- Risk exposure is what makes cell phone use the biggest threat

What you can do
- Personal example - stop using cell phone when driving (change to answer giving)
- Don't talk with people who call you while they are driving
- Educate employees, drivers, parents, friends and family
- Implement cell phone driving bans
- Support legislation and enforcement
- Hold offenders accountable

A Deadly Distraction
nsc.org/cellphoneDVD
- Full one hour presentation
- 20 minute highlight version
- All proceeds support FocusDriven

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