Center for Motor Vehicle Safety
Strategic Plan, 2020-2029

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Board of Scientific Counselors | April 2020
## CMVS Lead Team and Steering Committee

### Lead Team
- Dawn Castillo, Manager
- Kyla Retzer, Coordinator
- Rosa Rodríguez-Acosta, Assistant Coordinator
- Rebecca Olsavsky, Health Communication Specialist
- David Fosbroke, Long-term Planning Coordinator

### Steering Committee
- Anasua Bhattacharya (OD)
- David Caruso (WSD)
- Jonathan Friedel (HELD)
- Emily Haas (PMRD)
- Ted Hitchcock (DSI)
- Hongwei Hsiao (DSR)
- Joan Karr (OEP)
- Karl Sieber (DFSE)
- Hope Tiesman (DSR)
Today we will talk about...

- Background
- CMVS Strategic Plan Evaluation, 2014-2018
- CMVS Strategic Plan, 2020-2029
- Themes:
  - Automation, Fatigue, Distraction, Safety culture and management
- Communication results and recommendations
- Input from BSC
Background
Motor vehicle crashes at work

- Leading cause of U.S. work-related deaths
- Over 29,000 deaths from 2003–2018
- 36% of all deaths
- 1st or 2nd leading cause in every major industry group

$25 billion

Total cost to U.S. employers for motor vehicle crashes at work

$65,000

Per nonfatal injury

$671,000

Per death

*Data from 2013
Source: NTSB, Cost of Motor Vehicle Crashes to Employers – 2015
Purpose of NIOSH CMVS

Conduct research and develop strategies to prevent work-related motor vehicle crashes and resulting injuries.

How we do it:
- Set priorities for research
- Develop partnerships
- Obtain funding and conduct needed research
- Communicate results and recommendations
- Ensure translation into standards, regulations, policy, and guidance
Things for you to consider

- How can we effectively stimulate priority research in the extramural community?
- Which academic, industry associations, and others could partner with us to advance the plan’s objectives?
- How can we effectively get our findings into the hands of those who can put them into practice?
- How can we capture usage of NIOSH motor vehicle outputs by organizations outside of NIOSH?
CMVS Strategic Plan Evaluation, 2014-2018
Evaluation of 2014-2018 strategic plan

- Assessed progress on 5 strategic goals
- Process evaluation: 80% of performance measures partially or fully met
- Contribution analysis: 5 impact stories on key worker groups
- Posted to Research Program webpage

www.cdc.gov/niosh/motorvehicle/ncmvs/research.html
Report and Performance Measures

Goal 1
Identify risk factors for work-related crashes

Performance Measure 1.1.1: By 2014, complete at least two research projects addressing the role of operating environment factors on work-related motor vehicle crashes. Publish results.

Performance Measure 1.1.2: By 2015, submit a second publication based on matched CTV and FMIS data to a peer-reviewed journal.

Performance Measure 1.2.1: By 2014, publish one methods paper on case identification and data linkage procedures in a peer-reviewed journal.

Performance Measure 1.2.2: By 2015, submit a third publication to a peer-reviewed journal based on analysis of matched CTV and FMIS data for later data years.

Performance Measure 1.2.3: By 2016, initiate at least one research project to identify and evaluate sources of exposure data estimates.

Performance Measure 1.2.4: By 2018, develop guidelines for administering annual exposure estimates on work-related trips or miles traveled.

Status

- Not Met
- Partially Met
- Met or Exceeds
Impact Story: EMS workers

- Examined nonfatal injuries and exposures to workers
- Partnered with Dept. of Homeland Security and others to crash test ambulances
- Developed award-winning video series
- Impact: Society of Automotive Engineers published 10 new test methods to improve worker safety
- Impact: Test methods adopted into three national bumper-to-bumper standards
Impact Story: Truck drivers

- Collected body measurement data from >1,900 truck drivers
- Conducted a survey of 1,265 long-haul truck drivers
- Impact: Project partners able to design next generation of truck cabs with proper body dimensions
- Impact: FMCSA cited survey results in 2 commercial vehicle operator rules
CMVS Strategic Plan, 2020-2029
Inputs to the plan

- Previous strategic plan, midcourse review, evaluation
- Partners’ research needs and strategic plans
- Published literature
- Internal expertise
- Feedback from the public
Who will use the plan?

1. NIOSH internal researchers
2. NIOSH-funded external researchers
3. External research community and government agencies
About the plan

- Adopts 4 priority sectors defined in the NIOSH Strategic Plan: FYs 2019-2023
- Provides detailed research needs for 4 sectors and their priority worker groups
- Proposes research needs that would benefit ALL sectors
- Defines targeted actions by stakeholders
Three strategies

1. Identify crash and injury risk factors
2. Develop and evaluate engineering and technology-based interventions
3. Develop and evaluate motor vehicle safety management programs and practices
Themes

Topics that appear throughout the strategic plan

1. Automation
2. Fatigue
3. Distraction
4. Safety culture and management
Theme 1: Automation
ASSP Z15.3 Technical Report

Management Practices for the Safe Operation of Partially and Fully Automated Vehicles
Report: *Ensuring American Leadership in Automated Vehicle Technologies*

- Led by White House National Science and Technology Council
- Content: Potential benefits of technology, administration efforts supporting technology growth, government activities
- Notes NIOSH role and research
Theme 1: Automation

NIOSH niche: safe adoption and effective management systems surrounding these technologies in the workplace

- Assessing the use and understanding of automated features
- Developing and evaluating strategies to improve driver comprehension
- Adapting technologies for specialized vehicles
Theme 2: Fatigue
Recent fatigue-related outputs

1. COVID-19 fact sheets for truck drivers
2. Journal article: Factors associated with fatigue among taxi drivers¹
3. NIOSH Working Hours, Sleep, and Fatigue Forum (OGE, TWU, PSS)
4. June 2019 issue of *Behind the Wheel at Work* e-newsletter
5. New webpage: Driver Fatigue on the Job
6. Industry presentations

Theme 2: Fatigue

- Quantify role of work organization policies (scheduling, payment, etc.)
- Assess use of fatigue risk management systems and integration into other systems
- Evaluate specific strategies such as training (e.g. North American Fatigue Management Program), napping (EMS workers)
- Evaluate fatigue detection technologies
- Determine cost effectiveness of fatigue management
Theme 3: Distraction
Recent distraction-related outputs

1. Webpage: Recommends employers have full cell phone ban
2. National Safety Council distracted driving awareness month
3. Animated images to promote message
Theme 3: Distraction

- Describe sources of distraction, attentional overload
- Examine impacts of interaction of distraction with driver fatigue
- Identify methods to reduce cognitive distraction
- Evaluate acceptance/effectiveness of cell-blocking technologies
Theme 4: Safety culture and management
Fleet safety management practices¹

- Analysis of 70 fleets in multiple industry sectors
- Examined relationship between fleet safety programs and policies and collision/injury metrics
- Identified policies associated with better metrics:
  - FRM for light-vehicle drivers, cell phone record checks post-collision, some forms of driver training, determination of collision severity

Theme 4: Safety culture and management

- Evaluate effects of operational and work organization strategies (e.g., journey management, in-vehicle monitoring)
- Develop/evaluate initiatives to gain worker and front line-management buy-in of policies and programs
- Identify incentives and barriers to adoption of effective strategies
- Demonstrate business case for training, policies, and programs
Communicating results and recommendations
Officer Road Code Toolkit
Strategy for sharing findings

- Tailored to industry audiences, brief, simple
- Visually engaging
- End with a call to action
Evaluating the plan

- Track research projects and outputs (process)
- Track target actions taken by others (intermediate outcomes)
- Impact stories
Summary of comments

- Received 11 comments
- Commenters included:
  - National Safety Council, safety researchers, international researchers, individuals from multiple industries
- Topics included:
  - Safety management systems, distracted driving, fatigue, leading indicators, bike couriers
Implementing the new plan

Anticipated publication date: May 2020

- Market plan to NIOSH and other researchers to address CMVS priorities
- Develop MOUs with key partners
- Work to obtain data use agreements
- Increase extramural research on MV safety and align it with CMVS research priorities
Input from BSC
Questions to BSC members

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The findings and conclusions in this presentation are those of the authors and do not necessarily represent the official position of the National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention.

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