## A Safe System Approach and the Road to Zero

Introductions

Learning Objectives

## Agenda

## Introductions

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- Project Director of the Traffic Safety Research and Evaluation Group (TSREG) at the University of Georgia's College of Public Health
  - 3<sup>rd</sup> party evaluator of all Georgia GOHS's external grantees

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  - EMS Educator specializing in pre-hospital trauma care
  - Regional Trauma Advisory Council (RTAC) Coordinator
  - Chair of the Georgia EMS Education Consortium

## Learning Objectives

Understand how the 6 Safe System principles and the 5 Safe System elements aim to eliminate all fatal and serious injuries for all road users, including those in rural communities.

Explain how the United States can reach zero roadway fatalities by 2050.

Understand what advancements and limitations Emergency Medical Services (EMS) has in supporting the Road to Zero.

## Safe System Approach

A paradigm shift from conventional roadway safety approaches. The Safe System Approach aims to eliminate all <u>fatal and serious injuries</u> for all road users.

It does so through a holistic view of the road system that *first* anticipates human mistakes and second keeps impact energy on the human body at tolerable levels. The Safe System Approach represents a paradigm shift from conventional safety approaches in three main ways.

1) Rather than focusing on preventing human error, it instead <u>accommodates</u> human error.

2) The Safe System Approach is characterized by shared responsibility.

3) Whereas conventional safety methods are primarily retrospective, the Safe System Approach is prospective.

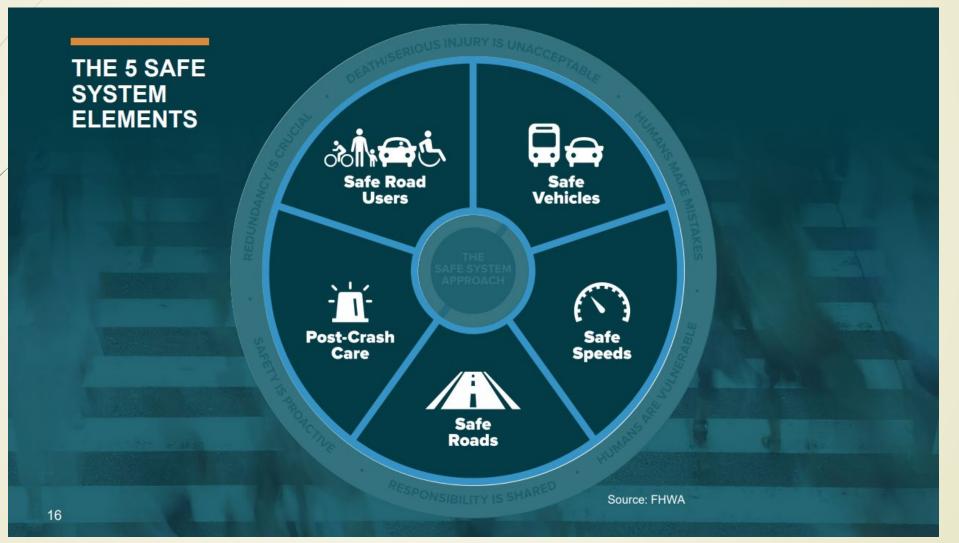
## The 6 Safe System Principles



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## The 5 Safe System Elements

These layers of protection and shared responsibility promote a holistic approach to safety across the entire transportation system.





#### 1. Safe Road Users:

Addressing the safety of people who walk, bike, drive, ride transit, and travel on roads.

#### 2. Safe Vehicles:

 Designing vehicles to minimize the occurrence and severity of collisions with the latest technology and safety features.

#### 3. Safe Speeds:

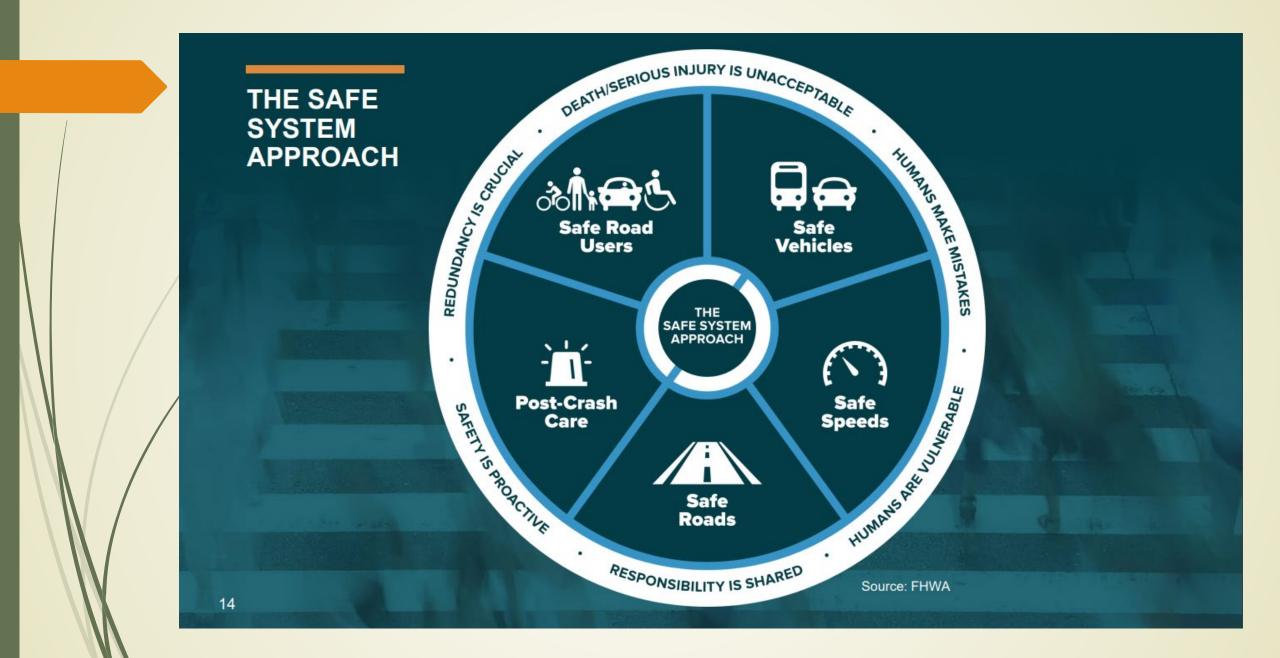
 Using speeds that limit impact forces, provides additional time for drivers to stop, and improves visibility.

#### 4. Safe Roads:

 Designing roads to accommodate human mistakes.

#### 5. Post-Crash Care:

Ensuring available and properly trained emergency responders to locate, stabilize, and transport for further treatment.





## The Road to Zero

A vision for achieving zero roadway deaths by 2050.





A Vision for Achieving Zero Roadway Deaths by 2050



### Who is dying on America's roadways?

#### 1. Young People

- Crashes are the leading cause of death for people ages 15 to 24.
- Crash risks for teen drivers are higher than any other age group.

#### 2. Men

- 71% of people killed in all crashes are men.
- By crash type, the percentage of fatalities that are men ranges from 49% of passenger car deaths to 99% of large truck deaths.

#### 3. Rural Road Users

 Rural roads are more dangerous than urban ones; for the same number of miles driven, more than twice as many people die in rural areas. The Road to Zero (RTZ) Coalition was established in 2016 and outlines 3 interrelated approaches for reaching zero roadway fatalities by 2050.

#### 1. Double Down on What Works

- The United States has both an accumulated body of evidence-based countermeasures and a well-established network of experts who can deploy them.
  - Engage political leaders and decisionmakers about policy.
  - Identify new or shared resources for research, roadway design and construction, vehicle engineering, law enforcement, consumer education, and trauma care.

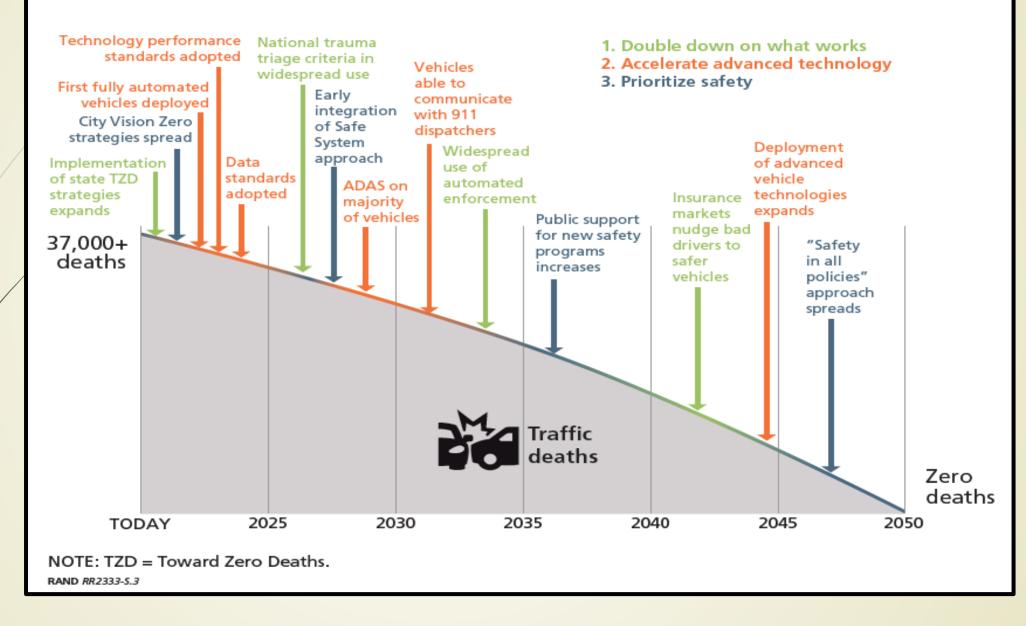
#### 2. Accelerate Advanced Technology

• Employ automatic emergency braking, adaptive cruise control, lanekeeping technologies, etc..

#### **3.** Prioritize Safety

- Create a safety culture and adopt a Safe System Approach.
- Raise awareness, educate, and constantly reinforce.

#### Three Approaches Working Together to Reduce Roadway Deaths to Zero



### Who can start taking action now?

#### **Federal Officials**

- Use incentives and standards to accelerate effective safety technology in the market.
- Support efforts to achieve safety goals in rural areas with adequate funding.

#### State and Local Officials

- Enact and provide adequate resources for the enforcement of strong traffic safety laws.
- Work with business to identify priority safety needs, support new policies, and align resources.

#### **Auto Manufacturers and Technology Developers**

Work with stakeholders to identify priority safety needs and accelerate widespread adoption of the most-promising life-saving technologies as quickly as possible.

#### **Safety Researchers and Advocates**

Educate consumers about the far-reaching effects of traffic crashes, injuries, and deaths, and about the potential for change.

#### **Business Community and Fleet Owners**

Work with local and state governments to utilize the full range of data sources to identify regional safety problems, select solutions, and create change.

#### Insurance Companies

- Participate in forums about data sharing and protecting consumer privacy.
- Educate consumers about the need for improved safety laws and programs, as well as the benefits of advanced safety technologies.

#### Law Enforcement and Judicial System

Enhance enforcement of existing and new safety laws.

#### **Emergency Medicine and Trauma Academics, Practitioners, and Advocates**

- Work with local and state governments to prioritize trauma system investments and improve trauma care.
- Prioritize investment in trauma system needs and identify methods with greatest return on investment, especially for rural areas.

### In summary...

- The Safe System Approach aims to eliminate all fatal and serious injuries for all road users (motorists, bicyclists, pedestrians).
- The Safe System Approach represents a paradigm shift from conventional safety approaches by accommodating for human error, sharing responsibility, and planning prospectively.



- The Safe System Approach is the method in which the United States will reach zero roadway fatalities by the year 2050.
- The Road to Zero is possible by doubling down on what we know works, accelerating advanced technology, and prioritizing safety.

#### ACCIDENTAL DEATH AND DISABILITY: THE NEGLECTED DISEASE OF MODERN SOCIETY

Prepared by the

COMMITTEE ON TRAUMA AND COMMITTEE ON SHOCK DIVISION OF MEDICAL SCIENCES NATIONAL ACADEMY OF SCIENCES NATIONAL RESEARCH COUNCIL

## Early Investments in Trauma Care

EMS evolves to increase access to life saving trauma care

## Current Improvements in Trauma Care

- Specialized EMS Training: Farm Medic, TECC, Crash Vehicle Extrication
- Stop the Bleed training and kits
  - Life Saving Interventions for point of injury care

### Pre-hospital Administration of Blood Products

Select EMS services now carry Fresh Frozen Plasma (FFP) and/or Whole Blood

Decreasing time to transfusion increases survivability following critical injuries

'Normal Saline' can contribute to the Trauma Triad of Death (hypothermia, acidosis, coagulopathy)



#### Farm Medic

• EMS providers receive training on specific agricultural equipment found in their area

#### Crash Vehicle Extrication

• Medics practice managing a critical patient requiring complex extrication

#### Tactical Emergency Casualty Care

• Medics are trained in the basics of entering an active threat environment and treating the wounded.

These courses are funded by the Georgia Trauma Commission

Specialized Regional Training for EMS

# Barriers to Improvements in EMS and Post-Crash Care



#### INVESTIGATIONS

#### Delayed: Ambulance Response Times Suffer From EMS Worker Shortage

A nationwide shortage of EMS workers is having a trickledown effect on ambulance response times during medical emergencies, according to figures reviewed by the NBC10 Investigators



Tampa Bay area EMTs 'stretched

thin' as worker shortage causes

long hours, burnout

#### Hospitals and nursing homes frustrated by ambulance staffing shortage

An ambulance responds to an emergency call in Joplin, Mo., in August 2021

Photographer: Angus Mordant/Bloomberg via Getty Images

### U.S. Ambulance Companies Sound Alarm on Workers in Short Supply

🕞 Listen 🛛 🛱 🖂



March 25, 2022, 5:00 AM

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BY NATHANIEL WEIXEL - 10/27/21 6:00 AM E

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As demand increases, Eastern Iowa ambulance services struggle with workforce challenges

Providers shift policies, take more active role in recruitment

COVID-19 takes EMS worker shortage to 'crisis level': American ambulance association president

FOX NEWS FLASH · Published October 10, 2021 4:05pm EDT

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Pandemic having crippling effect on decadelong EMS worker shortage

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C Michaela Ramm Feb. 18, 2022 1:49 pm, Updated: Feb. 18, 2022 4:10 pm

The first responder worker shortage is threatening basic emergency services

#### CORONAVIRUS

#### EMS services warn of 'crippling labor shortage' undermining 911 system

"We're not bleeding any longer – we're hemorrhaging," one ambulance service operator said of a decadelong worker shortage exacerbated by the pandemic.

#### The Pandemic Exacerbates the 'Paramedic Paradox' in Rural America

By Katheryn Houghton APRIL 7, 2022



Factors contributing to EMS retention and recruitment

Medics are:

- 3x more likely to be injured
- 10x more likely to have suicidal ideations or attempts
- 30x more likely to be assaulted on the job
- Compensated 40% less than the average-employed American

## Training and scope of practice for EMS providers

Post-Crash care depends on the skill and experience of the provider



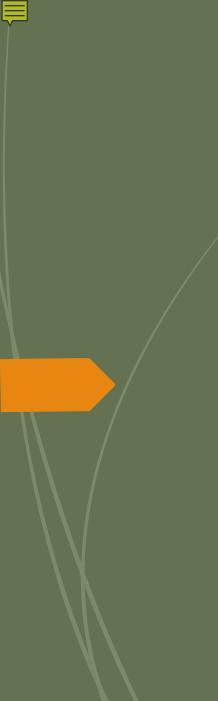
### Barriers to Improvements in EMS and Post-Crash Care

In 39 states EMS is not considered an essential service like law enforcement and fire departments.

Inconsistency in EMS service models is challenging for advocacy (Hospital based, Private services, combined fire service, or County based). In the US there are more than 19,000 separate EMS organizations.

Are we healthcare or public safety? If EMS is healthcare, perhaps we need to evaluate being housed under DOT. If EMS is public safety, then services should be more standardized with federal funding and a single oversight administration.





### Resources

EMS.gov https://www.ems.gov/

Georgia Trauma Commission https://trauma.georgia.gov/

National Center for Rural Road Safety https://ruralsafetycenter.org/

National Safety Council (NSC)

https://www.nsc.org/road/resources/road-to-zero/road-to-zero-home https://www.nsc.org/road/resources/road-to-zero/events-archive

U.S. Department of Transportation https://www.transportation.gov/NRSS/SafeSystem



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