Target Zero: Underutilized Strategies in Traffic Safety That Work

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In 2015, 35,092 people were killed in traffic crashes in the United States (US) That accounted for 1.3% of all deaths from all causes in the US that year.

That may seem like a small percentage, but many European countries and Australia had much lower percentages as a comparison

- United Kingdom - 0.3%;  Germany – 0.4%;
- Switzerland – 0.5%;  France – 0.6%;
- Australia – 0.8%.
The Problem

• About a third of the US traffic crash fatalities are due to speeding.
• Another third are due to alcohol-impaired driving.
• While almost half of the drivers and passengers in cars who were killed were not wearing their seat belt.
Many countries around the world are committed to the vision of eliminating fatalities on their Nation’s roads. The Zero Deaths vision is a way of describing how a combination of strategies is going to affect safety: **Toward Zero Deaths**.

The goal was first adopted by Sweden in 1997.
“Vision Zero” has evolved across the world and in many US states.

The approach uses a data-driven multidisciplinary approach involving highway design, vehicle safety features and the integration of education, enforcement, engineering and emergency medical services (www.TowardZeroDeaths.org).
The original Toward Zero Deaths Steering Committee includes:

AAMVA    NASEMSO
AASHTO   NACE
LTAP/TTAP CVSA
GHSA      IACP
In 2016, the National Safety Council established the “Road to Zero” coalition in partnership with:

- NHTSA
- FHWA
- FMCSA

*Road to Zero* is now a collaboration of almost 400 stakeholder organizations working toward zero traffic fatalities by 2050.

www.nsc.org/RoadToZero
• Road to Zero expands the effort to include not only representatives of road, behavioral and vehicle safety, but public health officials, technology companies, non-profit groups and others to develop a coordinated approach to highway safety.

• In the United States, proven effective strategies have been underutilized. For example, the following strategies could substantially reduce traffic fatalities:
1. Sobriety Checkpoints

- Checkpoints are highly effective in deterring drinking and driving.
- Checkpoints are safer for both police and the public than individual traffic stops.
- Widespread use of checkpoints could reduce fatalities by at least 8%.
- Only 38 states use sobriety checkpoints.
- Only 12 states conduct them on a weekly basis.
2. Automated Enforcement: Speed cameras/Red light cameras

- Speed and red light cameras are highly effective in reducing speeding and red light running.
- However, they are only used in a few US communities. The US Congress will not allow federal grant funding for their use.
- Studies show they could reduce fatalities in the US by 19%
3. Lowering the BAC limit for driving to .05 g/dL

- Studies in Australia and Europe show that lowering the BAC to .05 could reduce impaired driving traffic fatalities by 11%.

- Administrative sanctions (license suspension, fine) could be used for drivers with BACs=.05-.07 (highly effective in Canada).
4. Primary Safety Belt and Motorcycle Helmet Use Laws

- Primary safety belt laws result in a 91% seat belt usage rate (in the 34 states and DC) compared to a 79% usage rate in states with secondary laws (16 states).
- The use of seat belts saved 14,000 lives in 2015. An additional 2,800 lives would have been saved if all occupants in crashes were wearing their safety belt.
Motorcycle helmet laws saved 1772 lives in 2015 but only 19 states and DC have universal laws (all motorcyclists must wear a helmet)

28 states have helmet laws that only cover some motorcyclists (e.g. under age 18)

IL, IA, and NH do not have a motorcycle helmet use law

Wearing a helmet reduces the risk of a fatal injury in a crash by 37%
5. Alcohol Ignition Interlock Installations

- All states have alcohol ignition interlock device (IID) laws. Studies show that all offender laws are associated with a 16% reduction in drinking driver fatal crashes.
- Yet in the best states, only 50% of eligible offenders actually install the device on their car. Loopholes in the laws must be closed.
6. Lowering Speed Limits in Residential Areas

- When communities lower speed limits in residential areas, pedestrian and bicyclist fatalities are reduced by as much as 25%

7. Roundabouts that replace signalized intersections practically eliminate T-bone side collisions which can result in serious and fatal injuries.

- One study showed that roundabouts reduced crashes of all severities by 38%
8. Oral Fluid Screening for Drugged Driving

- Roadside surveys on week-end nights indicate that about 16-20% of drivers have impairing drugs in their systems.
- Australia uses an oral fluid drug screening device that can detect drug presence in about 3 minutes.
- These need to be approved for use in the states in order to detect and reduce drugged driving.
Success Stories

• In 1976 in Victoria, Australia, there were 1,061 traffic fatalities. In that year, random breath testing (RBT) was implemented as an enforcement measure and has been used every year since.

• RBT involves police randomly stopping vehicles and mandating a breath alcohol test from each driver. If the driver refuses, or if the BAC is > .05 g/dL, the driver is charged with DWI. Since 1976, traffic fatalities have been decreasing. In 2016, there were 291 fatalities, a 73% decrease in that total http://www.nap.edu/catalog/13046.html
In 2002 in France, the French president announced that road safety would be one of his priority initiatives in his new term of office. Political sponsorship at the highest level allowed for prompt action.

Thousands of speed cameras were installed around the nation, but especially in places where speed was a factor in fatal crashes. Due to speed cameras and impaired driving enforcement activities, traffic fatalities in France declined from 8,000 in 2002 to 4,000 in 2008, a reduction of 50%.
Success Stories

In 2006 in Edmonton, Alberta, Canada, there were 8,246 serious injuries and fatalities in traffic crashes, about half to pedestrians.

- After installing left-turn only green flashing arrows at 90 locations, modifying the angles of right turn lanes at 24 major intersections, implementing pedestrian crossing controls at 35 locations, and other roadway measures, serious injuries and fatalities declined to 3,396 in 2016, a 59% decrease.

Conclusions

Any of the above strategies can be implemented in the US.

• The cost may be significant, but the benefit to cost ratio would be substantial.

• In the US, we are killing 96 people per day on our roads, 4 deaths each hour, 1 death every 15 minutes of every day. Is that acceptable?

• Let’s ask the American public about these underutilized strategies. Would they support most of them?
Other Promising Strategies

- Shoulder and centerline rumble strips to reduce the risk of lane departure.
- Guardrails to reduce the severity of run-off-the-road crashes.
- Increasing fines for seat-belt violations.
- Enact and enforce bicycle helmet laws.
- Autonomous vehicles (self-driving vehicles to eliminate human error)
- Ride Sharing (Uber, Lyft) as an alternative to drinking and driving
Other Promising Strategies

- Driver Alcohol Detection System for Safety (DADSS) involving a passive alcohol reading via the driver’s touch or breath before the vehicle can drive.
- Seat Belt Use interlocks-vehicle will not drive unless every occupant uses the safety belts
- Speed Governors limiting how fast vehicles can drive (e.g. 80 mph)
- Seat-belt reminder systems in vehicles (chimes, etc.), especially for rear-seat occupants.
- Develop and implement evidence-based emergency vehicle operations standards.
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