



# HHS Public Access

Author manuscript

*Ann Intern Med.* Author manuscript; available in PMC 2022 October 07.

Published in final edited form as:

*Ann Intern Med.* 2015 August 04; 163(3): 234–235. doi:10.7326/M15-1278.

## Getting Everyone to Buckle Up on Every Trip: What More Can Be Done?

**Grant T. Baldwin, PhD, MPH,**

Centers for Disease Control and Prevention, Atlanta, Georgia

**Debra Houry, MD, MPH**

Centers for Disease Control and Prevention, Atlanta, Georgia

The Centers for Disease Control and Prevention (CDC) focuses on preventing illness, injury, disability, and death. To spotlight attention and focus activity, CDC Director Dr. Thomas Frieden has identified 7 public health “winnable battles.” These battles address public health issues in which judicious action and implementation of evidence-based and scalable interventions would have an immediate positive effect.

The prevention of motor vehicle injuries is a winnable battle, in part, because of the life-saving potential of seat belts and our opportunity to increase their use. The CDC aims to prevent deaths and injuries from motor vehicle crashes by focusing on modifiable behaviors through coordinated, sustained, and complementary actions with the U.S. Department of Transportation, especially the National Highway Traffic Safety Administration.

The most effective intervention to reduce injury of motor vehicle occupants in a crash is simple: Wear a seat belt. Seat belts reduce the risk for fatal injuries by approximately 45% and serious injuries by approximately 50% when worn in a motor vehicle crash (1). Seat belts are a critical and cross-cutting secondary prevention strategy. They protect persons regardless of who is at fault or the root cause of the crash, including those involved in crashes that result from the negligence of alcohol-impaired drivers and from distracted driving. Seat belts have saved the lives of 300 000 Americans since 1975, including more than 12 500 Americans in 2013 alone (1, 2). In that same year, approximately 2800 more Americans would be alive today if all unrestrained passenger vehicle occupants aged 5 years or older involved in a fatal crash had buckled up (2).

Seat belt use has climbed steadily in the United States and is now a social norm. Only 11% of Americans used their seat belts in 1982, and 87% of Americans used their seat belts in 2014 (3). However, seat belt use varied significantly by region: More than 95% of drivers

**Requests for Single Reprints:** Grant T. Baldwin, PhD, MPH, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, 4770 Buford Highway F-62, Atlanta, GA 30341, gfb3@cdc.gov.

Current author addresses are available at [www.annals.org](http://www.annals.org).

**Current Author Addresses:** Drs. Baldwin and Houry: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, 4770 Buford Highway F-62, Atlanta, GA 30341.

**Disclaimer:** The findings and conclusions in this editorial are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

**Disclosures:** Disclosures can be viewed at [www.acponline.org/authors/icmje/ConflictOfInterestForms.do?msNum=M15-1278](http://www.acponline.org/authors/icmje/ConflictOfInterestForms.do?msNum=M15-1278).

in the West buckled up compared with only 83% in the Northeast and Midwest (3). Besides the geographic variation, seat belt use remained lower at night and among teens, young adults, men, rural populations, and pickup truck drivers (3). In 2013, 49% of persons killed in passenger vehicle crashes were unrestrained, and seat belts could have prevented many of these fatalities (1).

Seat belt laws in nearly every state have been among the most effective strategies leading to increased seat belt use. These laws are categorized as either primary or secondary. Primary laws allow police officers to stop drivers and issue tickets just because the drivers or their passengers are not wearing seat belts. Secondary laws allow police officers to issue tickets for seat belt violations only if drivers have been pulled over for some other offense. Thirty-three states currently have primary laws, and 16 have secondary laws (4). New Hampshire is the only state without a seat belt law (4). Rates of seat belt use are 11 percentage points higher in states with primary laws than in those with secondary laws (3).

The article by Lee and colleagues (5) in this issue adds to the groundswell of literature documenting the effectiveness of primary laws. Lee and colleagues showed a 17% reduction in the incidence rate of motor vehicle fatalities in states with primary laws compared with those with secondary laws from 2001 to 2010 after other state legislative and economic factors were controlled for. At this point, the data on the effectiveness of primary seat belt laws are unequivocal. They work. They save lives and needless health care costs.

So, what more can be done to make sure everyone buckles up on every trip? The following evidence-based interventions could further increase belt use if they are implemented on a greater scale.

### **Apply existing seat belt laws to all positions in the vehicle.**

Just 62% of adults reported always wearing their seat belt when riding in a rear seat, and only 30 states required seat belts to be used in all seating positions (4, 6). Rear seat belt use was 17% lower in states that required belt use in only the front seats (7).

### **Increase fines.**

Research has indicated that seat belt use significantly increased if the fine amount associated with noncompliance was increased. For example, Nichols and colleagues (8) found a 6 – to 7–percentage point increase in use if the fine amount increased from the current median of \$25 to \$100 (this is in addition to the effects of a shift from secondary to primary laws).

### **Expand high-visibility enforcement at night.**

On average, nighttime seat belt use (between 9 p.m. and 4 a.m.) is 18 percentage points lower than daytime use among fatally injured occupants (9). Crashes are also more common at night. High-visibility enforcement (combining intensive enforcement of a particular traffic safety law with widespread media and public education campaign) has been shown to increase seat belt use, decrease speeding, and deter alcohol-impaired driving (10).

## Bolster communication campaigns, such as Click It or Ticket.

A critical component of enhanced enforcement is increasing public awareness of enforcement activity with campaigns, such as Click It or Ticket. There is strong evidence about the effectiveness of these types of programs in increasing seat belt use (8). Future campaign activities should consider further targeting populations with low rates of seat belt use, as noted previously.

The CDC recently released state-based fact sheets that included national and state data on restraint use and occupant crash deaths, as well as an overview of proven strategies for increasing seat belt use ([www.cdc.gov/Motorvehiclesafety/seatbelts](http://www.cdc.gov/Motorvehiclesafety/seatbelts)). It also released a new, easy-to-use, interactive, online calculator, Motor Vehicle Prioritizing Interventions and Cost Calculator for States, to help state decision makers prioritize and select from a suite of 12 effective intervention to prevent motor vehicle injury, including primary seat belt laws and enforcement campaigns ([www.cdc.gov/motorvehiclesafety/calculator/index.html](http://www.cdc.gov/motorvehiclesafety/calculator/index.html)). Motor Vehicle Prioritizing Interventions and Cost Calculator for States is designed to calculate the expected number of injuries prevented and lives saved at the state level, the monetized value of the number of injuries prevented and lives saved, and the costs of implementation.

Given the complexity of the public health challenges we face, we need to fully leverage and reinforce what works, especially when it costs so little to save so much.

### Acknowledgment:

The authors thank David Sleet, Erin Sauber-Schatz, and Ann Dellinger for their thoughtful comment and suggestions to improve this editorial.

### References

1. National Highway Traffic Safety Administration. Traffic Safety Facts: 2013 Data—Occupant Protection. Publication no. DOT HS 812153 Washington, DC: U.S. Department of Transportation; 2015. Accessed at [www-nrd.nhtsa.dot.gov/Pubs/812153.pdf](http://www-nrd.nhtsa.dot.gov/Pubs/812153.pdf) on 2 June 2015.
2. National Highway Traffic Safety Administration. Traffic Safety Facts Crash Stats: Lives Saved in 2013 by Restraint Use and Minimum Drinking Age Laws. Publication no. DOT HS 812 137 Washington, DC: U.S. Department of Transportation; 2015. Accessed at [www-nrd.nhtsa.dot.gov/Pubs/812137.pdf](http://www-nrd.nhtsa.dot.gov/Pubs/812137.pdf) on 2 June 2015.
3. National Highway Traffic Safety Administration. Traffic Safety Facts Research Note: Seat Belt Use in 2014 —Overall Results. Publication no. DOT HS 812 113 Washington, DC: U.S. Department of Transportation; 2015. Accessed at [www-nrd.nhtsa.dot.gov/Pubs/812113.pdf](http://www-nrd.nhtsa.dot.gov/Pubs/812113.pdf) on 2 June 2015.
4. Insurance Institute for Highway Safety. State laws: Safety belts May 2015. Accessed at [www.iihs.org/iihs/topics/laws/safety\\_beltuse?topicName=safety-belts](http://www.iihs.org/iihs/topics/laws/safety_beltuse?topicName=safety-belts) on 22 May 2015.
5. Lee LK, Monuteaux MC, Burghardt LC, Fleegler EW, Nigrovic LE, Meehan WP, et al. Motor vehicle crash fatalities in states with primary versus secondary seat belt laws. A time-series analysis. *Ann Intern Med* 2015;163:184–90. doi:10.7326/M14-2368 [PubMed: 26098590]
6. Bhat G, Beck L, Bergen G, Kresnow MJ. Predictors of rear seat belt use among U.S. adults, 2012. *J Safety Res* 2015;53:103–6. [PMID: 25934003] doi:10.1016/j.jsr.2015.03.011 [PubMed: 25934003]
7. Pickrell TM. Occupant Restraint Use in 2012: Results from the National Occupant Protection Use Survey Controlled Intersection Study. Report no. DOT HS 811 872 Washington, DC: National Highway Traffic Safety Administration; 2014. Accessed at [www-nrd.nhtsa.dot.gov/Pubs/811872.pdf](http://www-nrd.nhtsa.dot.gov/Pubs/811872.pdf) on 2 June 2015.

8. Nichols JL, Tippetts AS, Fell JC, Eichelberger AH, Haseltine PW. The effects of primary enforcement laws and fine levels on seat belt usage in the United States. *Traffic Inj Prev* 2014;15:640–4. [PMID: 24867574] doi:10.1080/15389588.2013.857017 [PubMed: 24867574]
9. National Highway Traffic Safety Administration. Traffic Tech Technology Transfer Series: Identifying Targets for Improvement in Night-time Seat Belt Use. Publication no. 390. 2010 Accessed at [www.nhtsa.gov/staticfiles/traffic\\_tech/tt390.pdf](http://www.nhtsa.gov/staticfiles/traffic_tech/tt390.pdf) on 2 June 2015.
10. National Highway Traffic Safety Administration. Traffic Safety Facts Traffic Tech—Technology Transfer Series: Nighttime Enforcement of Seat Belt Laws: An Evaluation of Three Community Programs. Publication no. 388 2010. Accessed at [www.nhtsa.gov/staticfiles/traffic\\_tech/tt388.pdf](http://www.nhtsa.gov/staticfiles/traffic_tech/tt388.pdf) on 2 June 2015.