

Identifying Opportunities to Decrease Vehicle Occupant Fatalities



U.S. Department of Transportation
National Highway Traffic Safety
Administration



NHTSA

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Suggested APA Format Citation:

Thomas, F. D., Blomberg, R. D., Korbela, K. T., Fauchier, C. M. & Zhang, J. (2017, July). *Identifying opportunities to decrease vehicle occupant fatalities*. (Report No. DOT HS 812 435). Washington, DC: National Highway Traffic Safety Administration.

Technical Report Documentation Page

1. Report No. DOT HS 812 435	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subject Identifying Opportunities to Decrease Vehicle Occupant Fatalities		5. Report Date July 2017	
		6. Performing Organization Code 290	
7. Authors F. Dennis Thomas, Richard D. Blomberg, Kristopher T. Korbelak, Charles M. Fauchier, Jingyi Zhang		8. Performing Organization Report No. 290-1	
9. Performing Organization Name and Address Dunlap and Associates, Inc. 110 Lenox Avenue Stamford, CT 06906		10. Work Unit No. (TRAIS)	
		11. Contract or Grant No. DTNH2211D00225L/0004	
12. Sponsoring Agency Name and Address Office of Behavioral Safety Research National Highway Traffic Safety Administration 1200 New Jersey Avenue SE. Washington, DC 20590		13. Type of Report and Period Covered Final Report 08/16/14-06/29/16	
		14. Sponsoring Agency Code	
15. Supplementary Notes Carole Guzzetta was the COR on this project			
16. Abstract This study focused on identifying opportunities to decrease vehicle occupant fatalities by comparing selected States with observed seat-belt-use rates above and below the 2013 national average of 87 percent as well as low and high percentages of statewide fatalities where the fatally injured occupant was unbuckled. The goal was to determine if the higher seat-belt-use States implemented policies, procedures, enforcement types or intensities, management practices, or any other approach that could be suggested for use in the States with lower seat belt use to improve their performance. This study was exploratory by nature and attempted to go beyond past research that had focused primarily on counts of <i>Click It or Ticket</i> citations to differentiate high-belt-use States from low-belt-use States. Nine States were selected for the examination—five that had higher than the 2013 average seat belt use and low percentages of unbuckled fatalities, and four where observed belt use was below average and the percentage of unbuckled fatalities was high. The data collection involved amassing a large set of information on demographics, socioeconomic, health, consumption levels (e.g., alcohol, cigarettes), highway safety activities, government (including funding), and legal structure. These more quantitative data were supplemented by discussions with State highway safety officials in each of the nine States. The study found that the populations in the high and low-belt-use groups of States differed in meaningful ways with respect to variables related to demographics, socioeconomic status, and health. In general, people in the high-use State group were better educated, earned more, and were healthier than their counterparts in the low-use group of States. The populations in the group of low-belt-use States may be more prone to risky behaviors and poorer health choices—factors that may also be related to lower seat belt use. Researchers also identified four specific programmatic factors and activities characteristic of the high-belt-use group of States that the low-use group could adopt with a reasonable expectation that they would increase seat belt use: 1) build political, law enforcement, and community support to promote seat belt use including creating a full-time position of occupant protection coordinator within the State Highway Safety Office; 2) increase enforcement of seat belt laws throughout the year; 3) develop in-house research and data analysis capabilities; and 4) determine what motivates a State's population through surveys and similar research techniques.			
17. Key Words Seat belt State Highway Safety Program Occupant protection Occupant protection coordinator		18. Distribution Statement This report is also available from the National Technical Information Service (NTIS) www.ntis.gov and the Behavioral Research Library at http://ntlsearch.bts.gov/repository/ntlcnhtsa/index.shtm	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 34	22. Price

Form DOT F 1700.7 (8-72)

ACKNOWLEDGEMENTS

The authors acknowledge the assistance of the NHTSA Regional Office personnel who established liaison with the State Highway Safety Offices in each of the nine studied States and the personnel in those offices who participated by providing documents and other insights into their State operations. Those individuals were instrumental in providing the information that led researchers to the conclusions reported herein. Although this study could not have been completed without their support, the findings and suggestions contained herein are those of the authors and should not be interpreted as representing the opinions of either the sponsor or the participants.

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Executive Summary

Background and Objectives

Seat belt use in the United States as a whole has increased steadily in the last decade, but significant variability still exists across the States. The current study had the objective of performing a program and process analysis to compare and contrast the practices of a selected set of States with higher levels of seat belt use (and lower rates of vehicle occupant fatalities and unbelted fatalities) to a group of States with lower seat-belt-use rates and poorer fatality statistics.

Method

NHTSA selected the nine States for the study to examine. Five of these States formed the “high-belt-use” group because they showed relatively high observed seat belt use according to their statewide observations (see Figure ES-1), low total fatality rates per population, and low percentages of motor vehicle fatalities in which the occupant was unbuckled. The four States in the “low-belt-use” group were associated with somewhat lower than average performance in 2013 with respect to the belt use and fatality factors. NHTSA based the State selection both on a ranking of multiple relevant criteria and a subjective assessment of which States had the potential to provide interesting insights. The study States therefore represented a convenience sample on which researchers could conduct case studies. Since this research was not an evaluation of specific States or their approaches, this report does not identify the nine States. Also, while the States in each group are distributed somewhat across the country, their selection was not based on any attempt to represent the entire United States or to achieve a balanced geographic sample.

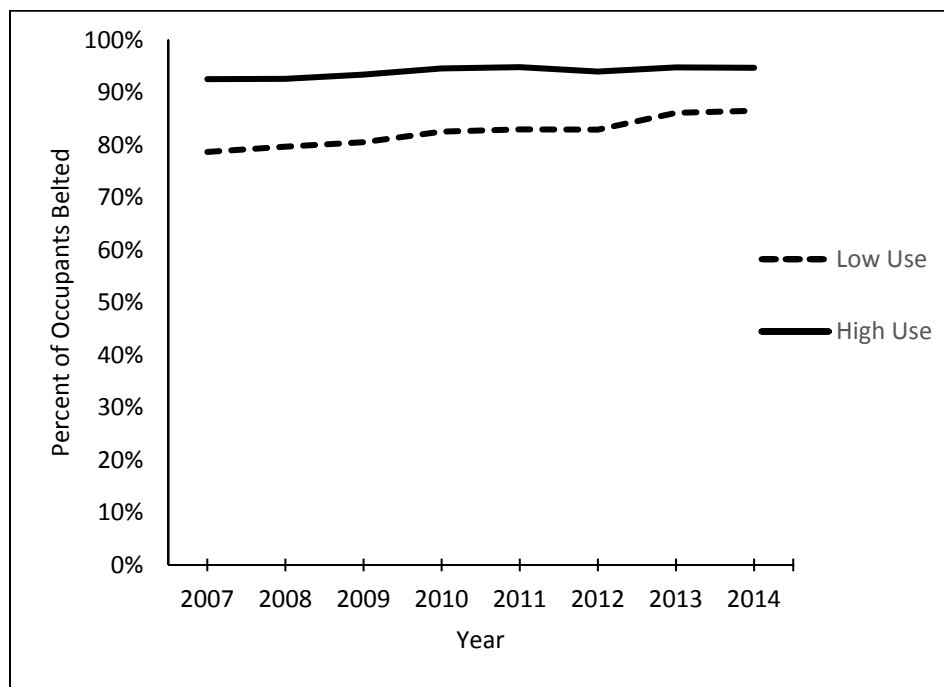


Figure ES-1. Percentage of Front Seat Occupants Belted by Year

The first project step involved the enumeration of a large set of potentially relevant variables that could be obtained from readily available sources such as web sites and published documentation. After enumerating the list, researchers made an attempt to secure data for each variable. The second step involved the collection of as much published information on highway safety and, in particular, occupant protection programs as possible from each State. The third step involved contacting a highway safety representative in each State by telephone to discuss relevant topics that might ultimately discriminate between the two groups of States. Data analysis consisted of a review of all information and any quantitative data. Although researchers did not attempt any statistical analyses due to the nature of the data and the subjectivity of the approach, many of the variables did display large and readily apparent differences by group thereby strongly suggesting associations of the variables in question with seat-belt-use rates.

Results

A number of notable differences emerged with respect to demographics, socioeconomic status, and health. States in the high-belt-use group had a greater proportion of residents with a bachelor's degree or higher, higher per capita and median household incomes, a lower proportion of residents at or below minimum wage, and fewer children living in poverty compared to the States in the low-belt-use group. Similarly, residents in the group of high-belt-use States tended to be in better health and engage in fewer risky activities such as smoking. The low seat-belt-use group had a larger proportion of African Americans, while the high-use group tended to have larger proportions of Hispanics and Asians. Also, the States in the low seat-belt-use group were smaller in area but had a greater proportion of their populations living in rural areas. The low-use State group had notably higher rates of violent crime than did the States in the high-use group. While State highway safety officials in the low-belt-use States cannot change the underlying population factors listed above, they may be able to tailor their highway safety activities to fit population characteristics. Researchers did, however, identify four specific programmatic factors and activities characteristic of the high-belt-use group of States that the low-use group could adopt with a reasonable expectation that they would increase seat belt use.

1. *Build political, law enforcement, and community support to promote seat belt use.* This can be accomplished through the creation of an occupant protection coordinator position at the State Highway Safety Office (SHSO), by working with a "champion" in the public sector, and by holding statewide and local conferences dedicated solely to occupant protection.
2. *Increase enforcement of seat belt laws throughout the year.* Raising the priority of seat belt enforcement and helping elevate the importance of seat belt use among law enforcement agencies throughout the year appears essential.
3. *Develop in-house research and data analysis capabilities within the SHSO.* Having in-house analysis and interpretation capabilities appears vital to a safety program in order to guide program activities and understand their impacts on safety.
4. *Determine what motivates a State's population.* The differences in the State populations suggest the low performing States need to conduct surveys or focus groups with sub-populations of interest to gauge responses to media and law enforcement approaches. Program activities can then be tailored to these populations to increase seat belt use.

Discussion

Based on the data collected, the experience of the researchers, and the comments from the highway safety officials in the high-use States, the presence of a full-time, experienced, and fully-dedicated occupant protection specialist in the SHSO is, perhaps, the most important single step a low performing State can take to begin the process of increasing seat belt use. This person can then direct all the other necessary activities to increase seat belt use. In addition, it appears that increasing seat belt enforcement throughout the year is essential to getting the public to increase their use of seat belts. Law enforcement's enthusiasm for seat belt enforcement also likely increases when fines are higher and there is political support for primary seat belt laws.

While there are obvious population differences in the two groups of States, the approaches used by the high-belt-use States should transfer to the low-belt-use States. Some modifications, however, may be necessary if it is determined certain subpopulations are not responding to the strategies. It is important to note that two of the States in the low-belt-use group appear to be poised to increase their occupant protection efforts if they receive funds and strategic guidance. These two have an interest in devoting more attention to occupant protection. They have the personnel and organizational systems in place to expand their occupant protection efforts quickly and efficiently. The other two low-belt-use States are severely limited by the structure of their organizations and other political barriers that may prohibit any meaningful occupant protection gains in the near future. These two low-belt-use States would require substantial political efforts and changes in their management structure and staffing levels in order to address their seat-belt-use problems.

Introduction

This study focused on *Identifying Opportunities to Decrease Vehicle Occupant Fatalities* by comparing selected groups of States with above and below average seat belt usage, low versus high total fatality rates per population, and low percentages of motor vehicle fatalities in which the occupant was unbuckled. From this point forward the States with high observed belt use, low rates of total fatalities per population, and low percentages of motor vehicle fatalities in which the occupant was unbuckled will be referred to as “high-belt-use States” and the “low-belt-use States” will be those that showed poorer performance for all of these measures. The goal was to determine if the high-belt-use States implemented policies, procedures, enforcement types or intensities, management practices, or any other approach that could be suggested for use by the States with low belt use to improve their performance.

Seat belt use in the United States as a whole has increased steadily in the last decade, but significant variability still exists across the States (Chen, 2015). In 2014, State seat belt use ranged from a low of 68.9 percent to a high of 97.8 percent (Chen, 2015). Although higher use rates are generally associated with States having primary enforcement seat belt laws, several notable exceptions existed in both directions (primary law States with lower than average use rates and secondary law States with higher than average use rates) (Chen, 2015). The same type of variability was seen with respect to belt use among fatally injured motor vehicle occupants.

The premise behind this study was that the possibility exists that higher performing States have organizations, strategies, or procedures that are more effective at increasing seat belt use than those employed by the lower performing States. Encouraging States with relatively low-use rates to emulate the practices in higher performing States raises the potential for significantly improving nationwide seat-belt-use rates, reducing the total number of vehicle occupant deaths, and reducing the number of unbelted fatalities. By highlighting programmatic and other performance gaps between these two groups of States, the results from this study have the potential to provide a foundation for future strategic technical assistance initiatives by the National Highway Traffic Safety Administration (NHTSA) to address the identified issues.

Objectives

The present study had the objective of performing a program and process analysis to compare and contrast the practices of a selected set of States with higher levels of seat belt use (and lower rates of vehicle occupant fatalities and unbelted fatalities) to those in a group of States with lower seat-belt-use rates and poorer fatality statistics. Achieving this objective required data gathering and analyses to identify programmatic and other performance gaps and the development of recommendations for remedial strategies. The analyses and resulting recommendations produced by this study are intended to be as comprehensive as possible and to encompass as applicable:

- Legislation
- Planning, including problem identification, goal setting, and selection and use of performance measures

- Funding
- Administration and management approaches, including leadership, staffing, and funding levels
- Choice, intensity, and process of relevant safety programs/countermeasures
- Enforcement approach, level, and management
- Adjudication approach, level, and management
- Extent and type of communications and outreach
- Extent of integration of the enforcement, adjudication, and communication functions
- Involvement of non-governmental advocacy group activities
- Demographic factors and how the States address them vis-à-vis occupant protection
- Socioeconomic factors and how the States address them vis-à-vis occupant protection
- Any other relevant factors that might be associated with higher occupant protection use rates.

This study was exploratory by nature and attempted to go beyond past research that had focused primarily on counts of *Click It or Ticket* (CIOT) citations to differentiate high-belt-use States from low-belt-use States (e.g., Hedlund et al., 2008). The current study approach involved examining as broad an array of information as could reasonably be amassed from two purposefully selected groups of States—high belt use and low belt use—and then attempting to assess which factors, if any, might be associated with better or worse performance. The desired outcome was the identification of potentially productive approaches, structures, funding levels, management approaches, and related processes for consideration as part of a State’s occupant protection promotion activities.

Approach

Prior to the start of the study, NHTSA selected the nine States for the study to examine. Five of these States formed the high-belt-use group because at the time of their selection they showed relatively high observed seat belt use according to their statewide observations, low total fatality rates per population, and low percentages of motor vehicle fatalities in which the occupant was unbuckled. Four of the five States in the high-use group had a primary seat belt law while one had a secondary belt law. The four States in the low-belt-use group were associated with somewhat lower than average performance with respect to these factors. Three of the four States in this group had primary seat belt laws, and one had a secondary law.

NHTSA based the State selection both on a ranking of multiple relevant criteria and a subjective assessment of which States had the potential to provide interesting insights. The study States therefore represented a convenience sample on which researchers could conduct case studies. Since this research was not an evaluation of specific States or their approaches, this report does not identify the nine States. Also, while the States in each group are distributed somewhat across the country, their selection was not based on any attempt to represent the entire United States or to achieve a balanced geographic sample.

Belt Use and Fatalities by Study Group

Figure 1 includes the average observed belt use for the high and low-belt-use groups of States (data from Chen, 2015). As can be seen in the figure, States selected for the low-use group reported consistently lower belt use over time compared to States picked for the high-use group. It is important to note that the group of low-use States demonstrate, on average, an increasing rate of observed belt use while the high-use group's belt use remains relatively stable with only minor increases over time. As expected given the observed belt use rates, Figure 2 demonstrates that the group of low-use States had, on average, higher percentages of fatalities where the occupant was unbuckled than the group of high-use States (NHTSA, 2015).

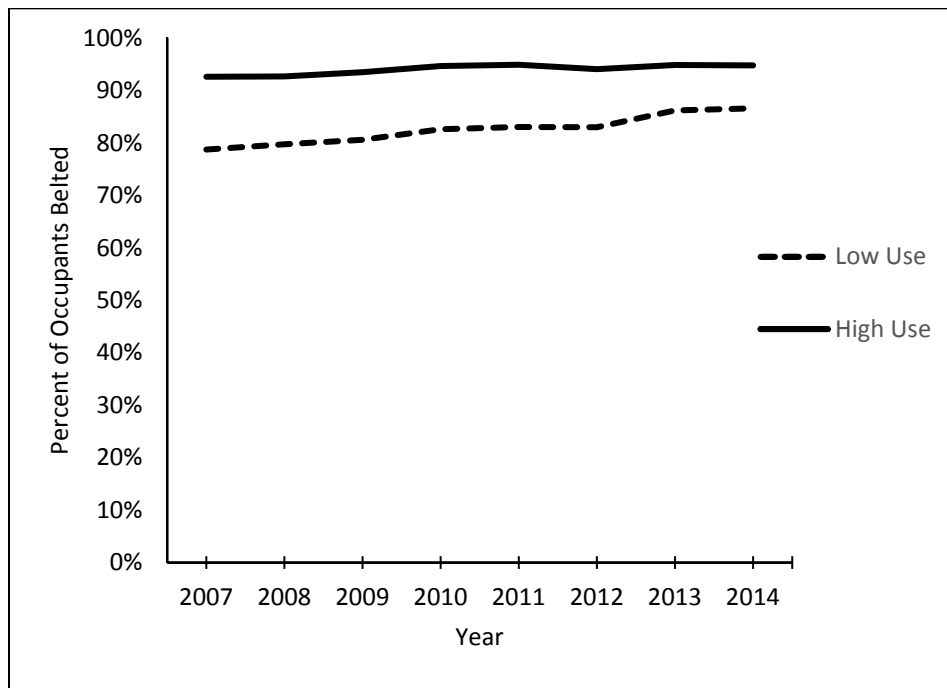


Figure 1. Percentage of Front Seat Occupants Belted by Year

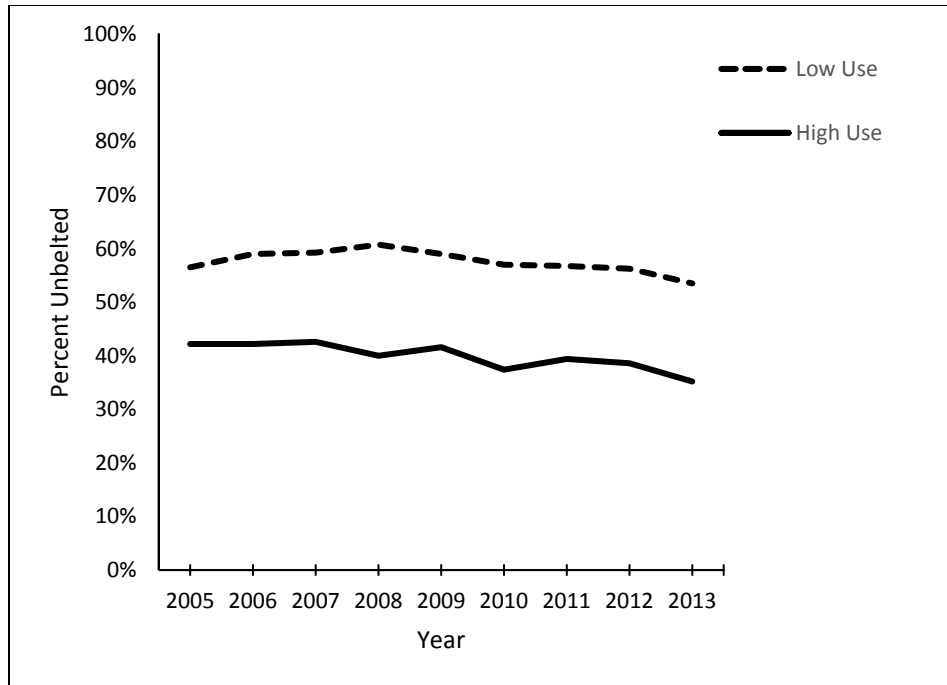


Figure 2. Percentage of Fatalities Where Occupant Was Unbelted

Figure 3 displays the average fatality rate per 100,000 population for the high and low-belt-use groups of States (based on data from the Insurance Institute for Highway Safety, 2015). The low-use group of States exhibited a consistently higher death rate compared to the high-use group with both groups trending down (improving) over time.

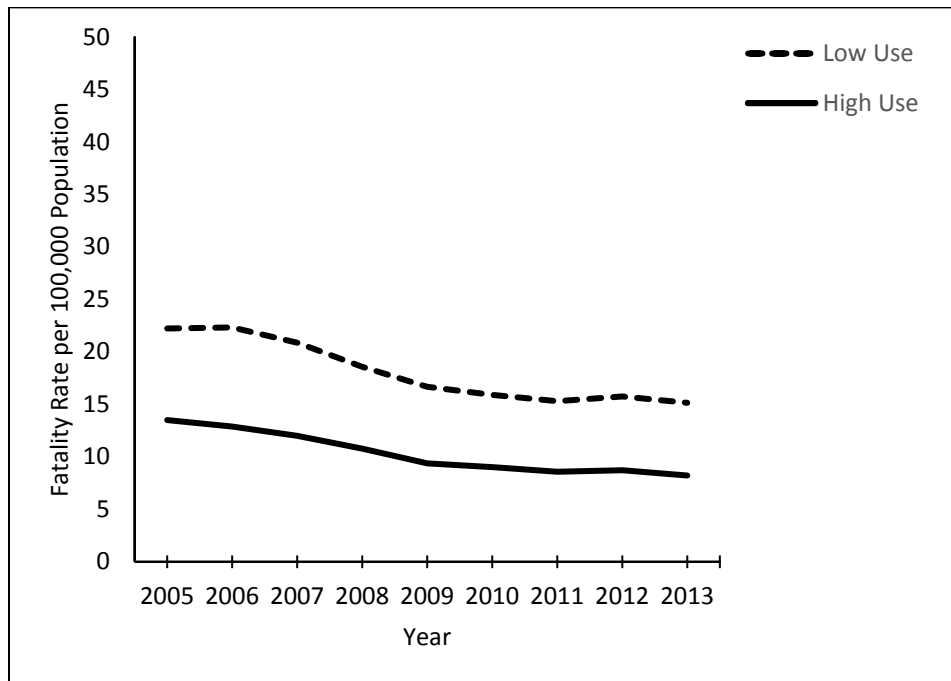


Figure 3. Motor Vehicle Crash Fatality Rate Per 100,000 Population

The above data demonstrate that the two groups of States were substantially different when it comes to belt use, percentage of fatalities where the occupant was not belted, and fatality rate per 100,000 population. The remainder of this report summarizes activities by researchers to identify commonalities among States within each group and to determine if fundamental differences exist between the high and low-belt-use groups of States. Where examinations identified possibly meaningful differences, researchers developed suggestions on ways that low-use States might implement approaches similar to those used by the high-use States and thereby potentially increase seat belt use and reduce unrestrained fatalities.

Information Gathering Approach

The first project step involved the enumeration of a large set of potentially relevant variables that could be obtained from readily available sources such as web sites and published documentation. These included information concerning demographics, socioeconomics, health, consumption levels (e.g., alcohol, cigarettes), highway safety activities, government (including funding), and legal structure.

After enumerating the list, researchers attempted to secure data for each variable from standard sources such as the U.S. Census Bureau, NHTSA's Fatality Analysis Reporting System (FARS), research reports, and State publications. When information on a specific variable was not available for all States, the variable had to be dropped from consideration. Using this process, researchers created a database that permitted displaying State (and, sometimes, county) differences numerically and graphically.

The second step involved the collection of as much published information on highway safety and, in particular, occupant protection programs as possible from each State. Some of this literature was available online or had been previously submitted to NHTSA as part of standard reporting. The balance was provided by the States themselves in response to requests by the researchers and from an examination of the last 10 annual highway safety plans from each State to extract salient data from them for the project database. Researchers also reviewed the Occupant Protection Program Assessment for a State, if one had been performed.

The third step involved contacting a highway safety representative in each State by telephone to discuss relevant topics that might ultimately discriminate between the two groups of States including the following.

- Highway safety program organizational structure
- General management approach and techniques
- Specific program management approach related to seat belt use
- Grants management
- Types of seat belt programs and their funding levels
- Demographics/socio-economics as they relate to seat belt use
- Seat belt citations (statewide and by county) both current and historic
- Seat belt use rate observation approaches and results both current and historic
- Specific items of interest discovered in the literature reviewed for the State

The project researchers identified the persons called through recommendations from NHTSA Regional and Headquarters personnel, previous contacts researchers had in the States, and published materials. The calls averaged approximately one hour. The discussions were unstructured, but the researcher kept a checklist of the main topics enumerated above to make sure of their inclusion in the conversation.

Data analysis consisted of a review of all information and any quantitative data by senior staff researchers. When appropriate, data comparing higher and lower performing groups of States were examined numerically (e.g., means, medians) and/or graphically to support pattern identification. In some instances, individual State data were examined. In others, each group's values were averaged to compare the groups as a whole. Although researchers did not attempt any statistical analyses due to the nature of the data and the subjectivity of the approach, many of the variables did display large and readily apparent differences by group thereby strongly suggesting associations of the variables in question with seat-belt-use rates and fatalities.

The final step involved reaching a consensus among the research team on the factors that likely were the main determinants of group membership. These were then divided into those that represented inherent characteristics of the State (e.g., income level, education level, racial composition) and those that likely emanated from the prevailing management approach, funding level, legal structure, and other potentially alterable State characteristics. Those factors judged capable of being replicated in another State formed the basis for the identification of recommended compensatory steps and for the suggestion of altered State-level management approaches to better address seat belt safety.

Results

This section presents the findings from the data gathering and comparison processes discussed above. Comparisons between the higher and lower performing State groups on key quantitative variables are presented first. This is followed by a discussion of information gleaned from the telephone conversations with each State and the review of State documentation such as State highway safety plans. Together, these findings form the basis for the recommendations in the final section concerning practices and approaches that States might consider adopting to improve their occupant protection situation. The reader should note that researchers found several of the States in the low-use group have independently recognized the potential of some of the activities contained in these recommendations and have already begun their implementation in an attempt to improve seat-belt-use rates and reduce unbelted fatalities.

Population Characteristics

A review of demographics, socioeconomics, education, and health data showed some substantial differences between the groups of high and low seat-belt-use States that likely contribute to the observed seat-belt-use differences. Table 1 reveals some notable differences in census estimates of race with the low-belt-use group having a much higher proportion of African-Americans than the high-belt-use group. The high-belt-use group of States had a greater proportion of Hispanics and Asians.

Table 1. Census Estimates of Race and Hispanic Origin by State Group

State Group	White (non-Hispanic)	African American	Hispanic	Native American	Asian	2 or more Races
Low belt use	70.05%	22.03%	4.48%	0.60%	1.68%	1.70%
High belt use	73.48%	4.90%	12.64%	1.42%	5.54%	3.22%

U.S. Census Bureau, 2015

As can be seen in Table 2, several health-related factors differed markedly between high- and low-belt-use State groups. On average, States with lower belt use had a higher incidence of babies born with low birth weight, higher adult smoking and obesity rates, and higher rates of adult hypertension. Low-belt-use States also had a lower percentage of adults who made dental visits.

Table 2. Health Factors by State Group

Factors	High-Belt-Use Average	Low-Belt-Use Average
Low birth weight ^a	6.78%	9.60%
Adult smoking rate ^b	17.40%	22.50%
Adult obesity ^c	27.00%	32.50%
Adult hypertension ^a	30.24%	37.73%
Adult dental visits ^a	67.92%	59.48%

^aUnited Health Foundation, 2015, ^bThe Henry J. Kaiser Family Foundation, 2015b, ^c The Henry J. Kaiser Family Foundation, 2015a

Table 3 lists key socioeconomic differences between the high and low groups of-belt-use States. As can be seen in the Table, the group of low-belt-use States had higher percentages of children in poverty, workers living at or below minimum wage, and lower per capita and median household income.

Table 3. Socioeconomics by State Group

Factors	High-Belt-Use Average	Low-Belt-Use Average
Children in poverty ^a	18.80%	26.00%
At or below minimum wage ^b	3.02%	6.05%
Per capita income ^a	\$28,416	\$24,795
Median household income ^a	\$54,837	\$44,951

^aU.S. Census Bureau, 2015, ^bU.S. Bureau of Labor Statistics, 2014

Socioeconomic factors (e.g., income, employment, social support and safety) often correlate with education level (University of Wisconsin Population Health Institute (2017)). Therefore, researchers examined available education statistics to see if they varied between the groups of States. Only one difference seemed meaningful. During the period 2009 to 2013, the group of high-belt-use States had more people older than 25 who obtained bachelor degrees or higher (U.S. Census Bureau, 2015). Taken together, more poverty, lower income, and lower education were associated with the group of low-belt-use States.

Table 4 shows geographic differences between the high and low-use groups of States. High-belt-use States were larger in square miles on average and thus had lower overall population density. Both groups had roughly the same number of large cities, but the higher performing group of States had greater percentages of their populations living in urban areas.

Table 4. Geography by State Group

Factors	High-Belt-Use Average	Low-Belt-Use Average
Size of State (mi ²)	84,690	54,027
Cities with population 100k+ ^a	4.20	4.75
Urban population percentage ^b	79.32%	67.25%
Population density (people per sq. mi) ^c	57.60	110.00

^aU.S. Census Bureau, 2015, ^bIowa State University, 2015, ^cDrexel University, 2015

Table 5 shows the differences in seat belt fines between the groups of high and low-belt-use States by law type. On average, the primary seat belt law high-use States had much larger maximum fines for not wearing seat belts and not properly restraining child passengers than the low-use States. The secondary seat belt law high-use State also had higher fines than the secondary law low-belt-use State.

Table 5. Average Occupant Protection Fines

Factors	High-Belt-Use Average	Low-Belt-Use Average
Primary law average max seat belt violation fine	\$120.38	\$25.00
Primary law average max child safety seat violation fine	\$119.75	\$58.33
Secondary law average max seat belt violation fine	\$25	\$10
Secondary law average max child safety seat violation fine	\$500	\$50

Governors Highway Safety Association, 2015.

Information to examine murder and violent crimes came from the Federal Bureau of Investigation (FBI) for 2014 (Federal Bureau of Investigation, 2016). The data covered all law enforcement agencies in the FBI’s Uniform Crime Reporting Program. Violent crimes are crimes that involve force or at least the threat of force. The violent crime statistic is composed of four specific offenses: murder and non-negligent manslaughter, forcible rape, aggravated assault, and robbery. The average number of violent crimes and rates of violent crimes and murder in 2014 were much higher in the group of low seat-belt-use States than in the high-use States group (Table 6).

Table 6. Violent Crime for 2009 to 2014

Factors	High-Belt-Use Average	Low-Belt-Use Average
Number of violent crimes	13,681.40	27,841.25
Violent crime rate / 100k inhabitants	331.14	498.35
Murder and non-negligent manslaughter rate / 100k inhabitants	2.80	7.08

State Highway Safety Plans

Every year, States are required to submit highway safety plans to NHTSA that detail goals and objectives, as well as strategies for meeting the State’s performance objectives. Researchers reviewed the highway safety plans from each State in both groups from 2006 to 2015. A content analysis was conducted in order to determine if any readily apparent differences in planned highway safety activities existed between the States in the two groups. In order to accomplish this task, researchers created a taxonomy of major highway safety areas (see Table 7) based on topics listed on NHTSA’s web site (National Highway Traffic Safety Administration, n.d.-a) augmented by topics included in the highway safety plans themselves.

The content and layout of each HSP varied across time based on legislative requirements. First, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was signed into law on August 10, 2005. With guaranteed funding for highways, highway safety and public transportation totaling \$244.1 billion, SAFETEA-LU represented the largest surface transportation investment in the nation’s history. After the expiration of SAFETEA-LU, the basic format and topic areas of the HSPs changed when the Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law on July 6, 2012, and made various changes to the highway safety grant programs administered by NHTSA. MAP-21 provided \$1.3 billion for highway safety grants programs from October 1, 2012, until September 30, 2014.

In general, the group of high-belt-use States had better organized highway safety plans. This was true with respect to the plan’s content, description of highway safety topics the State planned to address the following year, specific program plans, and budget detail.

Table 7. Highway Safety Plan Taxonomy

Major Program Category	Description
Planning and Administration	Planning, implementing, monitoring and evaluating highway safety programs; also includes administrative support for the management of these same program efforts
Occupant Protection	Seat belts, child passenger safety, or other occupant protection activity
Impaired Driving	Alcohol and drug impairment
Speed Safety	Specific program focus on speeding
Police Traffic	Covers a wide variety of serious moving violations, especially speed and stop sign/light violations; also includes corridor enforcement and vehicle safety inspection checkpoints
Traffic Records	Improving traffic records and highway safety data systems
Community Programs	Building awareness of highway safety issues in communities
Motorcycle Safety	Improving safety for motorcyclists
Roadway Safety	Assessing problems related to the roadway itself, improving the safety along segments of the roadway, and providing equipment and training for such activities
Bicycles/Pedestrians	Bicycle and/or pedestrian safety
School Buses	School bus safety
Aggressive Driving	Aggressive driving behaviors where an individual commits a combination of moving traffic offenses so as to endanger other persons or property
Distracted Driving	Distracted driving behaviors
Drowsy Driving	Drowsy driving behaviors
Teen Drivers	Teen driving including driver education and GDL
Older Drivers	Older driver safety and mobility
Research and Evaluation	Specific research activities with a focus on program or countermeasure evaluation
Emergency Medical Services	EMS training development and implementation, EMS response
Truck/CMV	Commercial vehicle and driver safety
Work Zone	Improving safety within and around work zones.
Railgrade	Improving railgrades
Rural Road Safety	Specific rural roadway focus

The review revealed that both high and low-use groups planned, on average, a similar number of programs per year across all identified highway safety topics (Table 8). Specifically regarding occupant protection, three of the high-belt-use States planned on average more than 10 occupant protection programs per year while two planned only 2 to 4 programs. The group of low-use States showed a similar pattern, with two States planning more than 10 programs per year while two planned only 2 to 4 programs per year. In general, regardless of group, the more programs a State planned, the smaller the budget for each individual program. It is not possible from this information to determine if having more or fewer programs planned was an effective way to increase seat belt use statewide since high variability existed within the group of high-use States. It was also not possible from the information in the highway safety plans to assess the quality of the programs planned for each year.

Table 8. Average Number of Highway Safety Programs per Year

Group	PA	OP	ID	PT	TR	CP	MS	BP
Low Belt Use	2.08	7.89	13.29	4.36	5.81	4.92	3.40	3.07
High Belt Use	2.49	9.10	14.50	4.79	5.88	9.54	3.91	3.03

Note. PA = Planning and Administration; OP = Occupant Protection; ID = Impaired Driving; PT = Police Traffic; TR = Traffic Records; CP = Community Programs; MS = Motorcycle Safety; BP = Bicycle/ Pedestrians.

Similarly, there were no identified patterns related to requested funding between the groups of low and high-belt-use States that could be used to make a statement about the impact of planned funding level on seat belt use. The only apparent difference between the groups was in the organization and detail of budgets with the States in the high-use group generally providing more detail and better organized budget plans for projects.

Click It or Ticket Activities

From 2007 to 2011, NHTSA reported counts by State of citations issued during the nationwide CIOT mobilization and associated media activities (Solomon, Tison, Preusser & Chaudary, 2009; Solomon, Tison & Cosgrove, 2013; Nichols & Solomon, 2013a; Nichols & Solomon, 2013b). These counts were reported by the States themselves and are subject to over- or underreporting. The counts may have been influenced by a number of factors including data availability and should be interpreted with caution. As shown in Table 9, the group of low-use States averaged more CIOT citations per State and tended to have much higher reported CIOT citation rates per 10,000 population than did the group of high-use States. The reader should also realize that these are counts of citations issued and not of convictions for seat belt offenses or for fines paid. Researchers could not readily obtain conviction data for the nine focus States which means it is unknown whether the higher rate of citations issued actually led to more convictions or fines paid by offenders.

Table 9. Average Number of Citations and Rate per Capita During CIOT

Group	2007		2008		2009		2010		2011	
	# of Citations	Per 10K Pop	# of Citations	Per 10K Pop	# of Citations	Per 10K Pop	# of Citations	Per 10K Pop	# of Citations	Per 10K Pop
Low Belt Use	6,386	12.0	10,576	20.3	10,252	19.0	8,565	16.3	8,779	17.0
High Belt Use	4,284	9.6	4,091	9.4	3,937	9.2	7,902	17.1	5,299	12.6

Counts of earned media and paid advertisements were also reported by the States for the years 2007 to 2011. Caution is warranted when reviewing this information in Table 10 since, just as with the citation data in Table 9, it is subject to reporting errors. One low-use State in particular reported extraordinarily high counts of media activities in some years while some of the high-use States reported no paid or earned media activities. Based on the information provided by the States, the group of low-use States averaged more earned media stories and paid advertisements than did the high-use group. Again, the reader is cautioned about the likely errors in these counts, and the data include no assessment of the quality of the media messages.

Table 10. Average Number of Media Advertisements

Group	2007		2008		2009		2010		2011	
	Paid Ads	Earned Media Stories	Paid Ads	Earned Media Stories	Paid Ads	Earned Media Stories	Paid Ads	Earned Media Stories	Paid Ads	Earned Media Stories
Low Belt Use	N/A	4,585	N/A	15,627	N/A	14,873	11,213	6,422	15,271	6,978
High Belt Use	N/A	3,575	N/A	1,818	N/A	3,261	5,278	230	2,660	279

Discussions With State Highway Safety Offices

The previous section identified a number of underlying population differences between the high and low State groups that likely played some role in the difference in their seat belt use. This study, however, was most interested in identifying occupant protection programmatic and strategic differences between the groups of States since these factors can potentially be addressed by a State Highway Safety Office. Researchers gathered the information included in the following tables through a combination of discussions with State highway safety personnel and a thorough review of available literature from the States. The statements included in the tables are

largely the judgments of the research staff that gathered and reviewed the information. It is important to note that while these researchers have extensive highway safety experience and knowledge of occupant protection programs; the conclusions and interpretation shown are those of only these individuals. Likewise, the choice of information categories to examine was also determined by the same researchers.

Table 11 provides a summary of the researchers' assessment of the priority given to highway safety issues and occupant protection relative to other political and public safety concerns in the two State groups. Not surprisingly, the high-belt-use group of States appeared to place a much greater emphasis on highway safety in general and had a specific focus on occupant protection in recent years. It is important to note, however, that at least one State in the high performing group is deemphasizing occupant protection by moving towards a maintenance model, which focuses less on occupant protection program activities. The reasoning is that the State has experienced high belt use for years and therefore might no longer need the same level of program activities since the use of seat belts has become ingrained. That State does plan to keep monitoring seat belt use and occupant fatalities to determine if this change in strategy negatively impacts safety in the State.

Table 11. Highway Safety Priority

Factor	High-Belt-Use Group	Low-Belt-Use Group
Priority given to general highway safety by the States in the group	All 5 States reported giving general highway safety high priority	Highway safety was reported as a high priority in 2 States but low priority in 2 others that have limited political support for highway safety
Priority given specifically to occupant protection	SHSOs reported a very high priority in all 5 States along with political support for occupant protection activities. But, at least 1 State is moving to a maintenance model	Low reported priority in 3 of 4 States due, in part, to funding issues, but primarily the result of political factors (e.g., recommendations for higher fines disregarded; little to no funding allocated for occupant protection staff)

Table 12 covers the State Highway Safety Office (SHSO) structure as related to occupant protection in the high and low performing groups of States. The organizational location of an SHSO, in terms of parent agency (e.g., DOT, Public Safety), did not appear to have an association with whether a State was in the high- or low-seat-belt-use group. What did appear to affect group membership was the size of the SHSO staff and the degree to which the staff were apparently specialized as indicated by the number of specialty areas to which each staff member was assigned. All of the States in the high-belt-use group had a coordinator dedicated only to occupant protection over the last 10 years when they achieved and maintained high seat belt use. In addition, the representatives from the high-belt-use States indicated they thought having a dedicated occupant protection coordinator was essential to their success and the improvement in safety across the State. Only one of the States in the low-belt-use group had a staff member dedicated solely to occupant protection. The States in the low performing group indicated they did not have the staff available to dedicate an individual only to occupant protection. The absence of a full time, longstanding staff member devoted to occupant protection is a significant difference between the two groups of States. All of the States in the high-belt-use group said it

was absolutely essential to have a dedicated occupant protection coordinator, and several of the States in the low-use group lamented their inability to place someone in this position. It is important to note that one of the high-belt-use States recently eliminated the full-time occupant protection coordinator position as they transition to a “maintenance model” for occupant protection. The State will still conduct occupant protection activities, but these will be managed alongside other duties by one staff member.

Table 12. State Highway Safety Office Structure

Factor	High-Belt-Use Group	Low-Belt-Use Group
Location of Governor’s Highway Safety Program	Varies—some in transportation, some in public safety, some as an independent commission	Varies—some in transportation, some in public safety, some as an independent commission; 1 in “other” agency
Office of Highway Safety organization and structure	All are well-organized with clear structure and focused/narrow job duties for staff members	2 are well-organized with clear structure and fairly narrow job duties for staff members; 2 have limited staff and less than ideal structure to manage all aspects of a complete highway safety program—a single staff member may be responsible for multiple programs or domains
Staffing	Large highway safety offices in all States (Average 18 staff members in main SHSO)	2 States have large (Average 18 staff) highway safety offices and 2 States have very small (Average 7 staff) highway safety offices which severely limits their ability to run occupant protection programs
Occupant protection coordinator	All have had a dedicated occupant protection coordinator and feel the position is vital to having high seat belt use; 1 State recently eliminated the dedicated position as part of its new trial maintenance approach to occupant protection	Only 1 has a full-time occupant protection manager dedicated solely to occupant protection
Tenure of occupant protection coordinator	All have been in the position for many years; 2 States have managers retiring soon	The 1 State with a dedicated manager just hired a new person and there was a limited duration in the position for the prior manager

Table 13 provides information on occupant protection grants management and funding in the two groups. All of the States in the high-belt-use group had well-managed and extensive highway safety grant systems in place with required reporting by law enforcement agencies receiving grants. Meticulous management of occupant protection grants was an important area of emphasis in the States in this group and was a specific duty of the occupant protection coordinator. Most of the high-belt-use States indicated that steady support for enforcement was essential to their efforts to increase seat belt use to the high levels seen today. Some noted, however, that monetary support was no longer necessary since seat belt enforcement had been engrained in the everyday activities of many law enforcement agencies across the State.

Table 13. Occupant Protection Grants Management and Funding

Factors	High-Belt-Use Group	Low-Belt-Use Group
Grants management	All have a well-managed and extensive grants system including reporting requirements for grant recipients; Occupant protection grants are an important part of highway safety office activities	2 of the 4 States have extensive grants programs for highway safety, but occupant protection is not a major focus area for any of the States; Reporting requirements are somewhat lax in 2 of the 4 States
Occupant protection funding	Steady funding over the last 10 years, but generally not a large budget; law enforcement generally does not require monetary support to keep occupant protection a high priority once it is engrained in their activities	Virtually no funding in the past but increasing funding for additional media and enforcement activities

Among the States in the low-use group, two States had extensive grants management systems for highway safety, but occupant protection was not a focus area since substantial funding was not available or staff were not available to manage such grants. The other two low-belt-use States had little oversight of occupant protection grant funds at the SHSO level and somewhat lax reporting requirements for agencies receiving such funds since staff had significant other duties that precluded a detailed focus on the administration of the occupant protection grants. While the States in the low-belt-use group do appear to have good regional offices and/or law enforcement liaison (LEL) management systems in place, oversight of occupant protection grants did not appear to receive a high priority.

Table 14 highlights some substantial differences in occupant protection related law enforcement activities between the high and low-belt-use groups. All of the States in the high belt group indicated that occupant protection is a high priority for law enforcement, but noted achieving this high level of buy-in did not happen overnight. Developing a strong emphasis on occupant protection took many years of hard work by the occupant protection coordinators and other SHSO staff. Several of the States in the high-use group mentioned that a “champion” was vital to encouraging lawmakers and others to adopt primary seat belt laws and increase fines. This champion was often someone outside of the highway safety office who had taken an interest in occupant protection and had independently approached legislators. In addition, high fines appear to motivate law enforcement personnel to issue more citations since the higher fines convey the notion that wearing a seat belt is an important public safety issue.

SHSO staffs in the low-belt-use States noted that occupant protection likely was less of a law enforcement priority in part because of low fines that made it not worth an officer’s effort. Several States reported the notion that the low fines were viewed as an unlikely deterrent for the potential offender and “not worth the time” compared to other offenses such as speeding that commanded higher fines. Other issues highlighted by States in the low-belt-use group included a shortage of traffic officers (and law enforcement staff reductions in general), lack of funding, and a general apathy toward traffic safety by many local police and sheriff’s departments.

Table 14. Law Enforcement

Factors	High-Belt-Use Group	Low-Belt-Use Group
Law enforcement buy-in	Occupant protection is a high priority for law enforcement in all of the States; all States acknowledged that it took a long time to get statewide buy-in; high fines appear to make the point that occupant protection is important; traffic Safety is viewed by most law enforcement as an important part of their job	Law enforcement buy-in is limited in most of the States; reasons for this include low fines (not worth the effort); concerns over personal freedom; shortage of traffic officers
Law enforcement coordination	Strong LEL presence in 4 of the States which helps coordinate and recruit agencies for occupant protection activities; most hold statewide occupant protection conferences to motivate officers; State Police/Patrol, sheriffs, and local police all coordinate well	States generally have good LEL programs, but occupant protection is not usually the focus; no statewide conferences focusing substantially on occupant protection; 3 States have difficulty getting sheriffs to participate
Seat belt fines	All have high fines, and highway safety staffs believe this contributes to increased seat belt use	1 State recently increased fine; Other 3 have very low fines, which according to the SHSO, demotivates law enforcement and poses little deterrent to non-users of seat belts

As shown in Table 15, there were substantial differences in the research and data capabilities within the highway safety offices of the States in the high and low-belt-use groups. Four of the five States in the high-belt-use group had in-house research capabilities with experienced staff that could manage research efforts and interpret data to guide program activities. All members of the high-belt-use group made extensive use of data to structure their program activities and encourage local enforcement agencies to utilize data to guide their enforcement efforts. Each also actively oversees the statewide seat belt observations and ensures that NHTSA guidelines are being followed. Of special interest, one of the high-belt-use States requires law enforcement agencies receiving occupant protection grant funds to conduct their own pre/post enforcement blitz seat belt observations. These local data are submitted to the SHSO and compared to the regional data collected as part of the statewide survey. The State personnel believe this strategy may stimulate the local agencies to improve their belt use rates since it provides immediate and local feedback on program effectiveness.

Table 15. Research and Data

Factors	High-Belt-Use Group	Low-Belt-Use Group
Research capabilities	4 of the 5 have research capabilities within the SHSO and staff that can conduct data analyses and interpret results; also work with universities and other partners	None have in-house research capabilities; some work with Universities or analysts from other agencies for research and data analysis efforts
Occupant protection and crash data	All make extensive use of available occupant protection and crash data to guide program activities; encourage local agencies to utilize data	Occupant protection data are limited in 2 of the States due to staffing shortages; 2 States make use of data but limited funding for program activities constrains how the data can actually be used
Seat belt observations	Actively oversee seat belt observations and use belt use data to identify problem areas; Some States go well beyond the minimum observation requirements set forth by NHTSA; Feedback results to local agencies; 1 State requires local agencies to conduct pre/post observations any time conducts grant funded seat belt enforcement	Little oversight of seat belt observations which are contracted out; Not clear on if or how the belt use data are utilized to guide program activities

All of the above for the high-belt-use States is in stark contrast to the research and data capabilities related to occupant protection in the group of low-belt-use States. None of the States in the low-use group had in-house research capabilities. While they do work with universities or analysts from other agencies, the lack of experienced research staff within the State agency itself likely limits the extent to which occupant protection information can be utilized. Although these States do make use of crash data including alcohol/drug involvement to allocate resources for enforcement related to these offenses, it appears they do not apply the approach to the same extent with respect to occupant protection.

In spite of the research focus of the highway safety programs in the group of high-use States, it is interesting to note that none of the SHSOs in either group had ready access to and made routine use of statewide seat belt citation data. With extra effort most could have provided counts of citations issued during grant funded activities as had been done in the past for the NHTSA CIOT reports. The high-use group States appeared more likely to have this grant-related information readily available. None of the States in either group, however, could produce this information for non-grant enforcement time periods since agencies had no reporting requirements during non-grant periods. This citation information was generally housed in an Administrative Office of the Courts or its equivalent in each State. Given that researchers could not obtain this information from the States, it was not possible to compare the State groups on enforcement levels across entire years or during non-grant funded time periods.

The final attribute examined by researchers was paid and earned media for occupant protection enforcement campaigns. The information in Table 16 below appears to contradict the previously discussed media efforts reported by the States in the NHTSA 2007-2011 reports on CIOT as the States in the high-belt-use group tended to report more paid and earned media activities during the discussion with project staff. All of the States in the high-belt-use group indicated they had a strong emphasis on both paid and earned media for occupant protection. Several of them stressed that earned media was just as important as paid media since it often included a localized message delivered by a newspaper or personality that carried extra weight in the community. In general, the States in the high-belt-use group tried to keep the occupant protection message in the public eye as much as possible, which also meant law enforcement agencies were constantly reminded of the importance of occupant protection.

All of the States in the low-belt-use group reported little past use of paid media. Two of the States reported recently increasing their paid media efforts focused on occupant protection. All of the States in the low-use group reported weak or nonexistent earned media efforts related to occupant protection.

Table 16. Media Use

Factors	High-Belt-Use Group	Low-Belt-Use Group
Paid media	Substantial occupant protection paid media efforts	Very little paid media in the past among all States; 2 States are starting to do more occupant protection media
Earned media	Strong emphasis on earned media; constant efforts to keep message out there	Generally weak earned media

Discussion

This study was exploratory in nature with the objective of identifying factors, policies, or procedures in effect in high-belt-use States that might be suggested to improve performance in low-belt-use States. The study involved the review of a substantial quantity of information on State demographic and socio-economic variables, as well as highway safety programs and program management. The results included observations on apparent differences between the two groups of States and the development of a list of factors extant in the high-belt-use group that States in the low-use group could potentially emulate. This section discusses the observations on differences first and then the factors subject to change.

Differences Between the High and Low Performing Groups of States

A first step involved determining if the populations in the high and low-use groups of States differed in some meaningful way that might impact the success of strategies that an SHSO could successfully employ to increase seat belt use. A number of notable differences emerged with respect to variables related to demographics, socioeconomic status, and health. States in the high-belt-use group had a greater proportion of residents with a bachelor's degree or higher, higher per capita and median household incomes, a lower proportion of residents at or below minimum wage, and fewer children living in poverty compared to the States in the low-belt-use group. Similarly, residents in the group of high-belt-use States tended to be in better health and engage in fewer risky activities such as smoking. The low seat-belt-use group had larger proportions of African-American, while the high-use group tended to have larger proportions of Hispanics and Asians. Also, the States in the low seat-belt-use group were smaller in area but had a greater proportion of their populations living in rural areas. The low-use State group had notably higher rates of violent crime than did the States in the high-use group.

These findings suggest the populations in the group of low-belt-use States may be more prone to risky behaviors and poorer health choices—factors that may be related to lower seat belt use. The observed income and education differences are also likely related to lower seat belt use in these States. While these underlying population differences are not something an SHSO can directly change, they represent factors that officials in the States with lower than average belt use must be cognizant of and contend with in order to increase seat belt use. SHSO staff in two of the low-belt-use States believed their populations and political situations were so substantially different than in other States that improvements in occupant protection performance were not viable in the current environment. On the other hand, some of the States in the high-belt-use group indicated they had dealt with similar futility perceptions in the past in their States, and, with time, they were able to overcome these difficulties using the strategies mentioned in this document. One particular point emphasized by States in the high-use group involved the importance of having a “champion” to push through legislation and an experienced occupant protection coordinator dedicated to the job and willing to work relentlessly to promote occupant protection in the State, especially in areas of the State where occupant protection had not been a priority in the past.

Political and legislative support for general highway safety, and occupant protection in particular, also seemed to be lagging in the group of low-belt-use States. This is evidenced by the

substantially lower fines for failure to wear a seat belt or properly use a child safety seat in these low-use States. Also, the relatively small highway safety offices (in terms of number of staff members) in at least two of the States in the low-use group inevitably affected their ability to administer and monitor occupant protection activities adequately. The lack of a dedicated occupant protection coordinator in three of the four States in the low-use group likely hindered their occupant protection efforts and supports the notion that occupant protection does not receive a high priority in those venues.

The lack of strong political and legislative support for occupant restraint improvement likely contributes to the lower interest by law enforcement agencies in the low-use group of States. The low fines and general budget shortfalls at enforcement agencies appears to have led to a situation where occupant protection has taken a back seat to other priorities. While these factors are probably universal, the researchers believe that the effects of the situation operate more strongly in the low-use group of States. It is important to note, however, that two of the States in the low-use group appear to be poised to increase their occupant protection efforts if they receive funds and strategic guidance. These two have an interest in devoting more attention to occupant protection. They also have the personnel and organizational systems in place to expand their occupant protection efforts quickly and efficiently but simply lack the resources to implement a more comprehensive program.

Another notable difference between the two groups of States relates to the reported amount and focus on paid and earned media. Most of the States in the high-use group reported that they utilize extensive paid media combined with substantial and successful earned media efforts. States in the low-use group reported using little paid or earned media for occupant protection in the past except perhaps as part of past research projects. Again, the lack of reported paid and earned media use by these States appears to stem from a lack of personnel to coordinate the media efforts at both the State and local levels. At least one of the States in the low-use group has started expanding its paid media efforts. It is important to note that this finding is based solely on the interviews and is not supported by actual counts of media activities. The finding should, therefore, be interpreted with caution.

Still another notable difference between the low and high-use State groups was the availability of internal research staff capable of conducting, managing, and interpreting research. None of the States in the low-use group had researchers on staff (partly due to small staffs in two States), while all but one of the high-use group had experienced researchers and analysts within their highway safety agencies. If the States in the low-use group needed research, they generally relied on external entities (e.g., universities, contractors) to conduct and interpret research. The high-use group of States also relied on external entities to conduct much of their research, but their internal research staff were involved in the oversight of the research which provided both interpretation of results and a bridge between the research and program activities. This appeared to allow a more efficient deployment of resources since there was constant monitoring of the impacts of various occupant protection efforts thereby providing improved feedback. While all the States in both groups claimed to be data-driven, it was clear that those in the high-use group were using data more effectively to target specific occupant protection problem areas. This is almost assuredly the result of the absence of staff in the low-use group of States who could put

together quality databases and interpret evaluation results in a manner that would provide guidance for deployment of occupant protection resources.

Factors Subject to Change in Low Seat-Belt-Use States to Achieve Higher Belt Use

As discussed above, many of the most salient differences between the high- and low-use groups of States related to basic demographics and socioeconomics. While State highway safety officials in the low-belt-use States cannot change the underlying population factors listed above, they may be able to tailor their highway safety activities to fit population characteristics. Researchers did, however, identify four specific programmatic factors and activities characteristic of the high-belt-use group of States that the low-use group could adopt with a reasonable expectation that they would help raise seat belt use.

1. Build political, law enforcement, and community support to promote seat belt use.
 - a. Create the position of occupant protection coordinator in the SHSO whose sole function is to promote occupant protection across the State. Staff this position with an experienced professional and do everything possible to retain individuals in this post.
 - b. Work with a “champion” from the general public who can assist with promoting legislation to raise fines and increase budgets for occupant protection.
 - c. Hold statewide and local conferences for law enforcement focused solely on occupant protection. Require attendance from grant recipients. Include interesting speakers that will engage attending officers (speakers from States with high belt use might be particularly effective).
2. Increase enforcement of seat belt laws throughout the year.
 - a. The States in the high-use group acknowledged that it was important to support enforcement of seat belt laws throughout the year. After many years, seat belt enforcement had become an integrated part of everyday law enforcement activities in the State, but additional encouragement was still considered essential to ensure high levels of enforcement throughout the year and for nighttime seat belt enforcement activities in particular.
 - b. Reduce the reporting burden for seat belt enforcement grant recipients through automated and/or real-time reporting systems.
3. Develop in-house research and data analysis capabilities.
 - a. Use data and research to focus on hotspots of low belt use.
 - b. Identify areas where seat belt use is low among fatally and seriously injured drivers.
 - c. Monitor seat belt use all over the State not just in the areas dictated by the national standards for statewide seat-belt-use estimates.
 - d. Feed results back to law enforcement agencies.
 - e. Require local agencies receiving grants to monitor seat belt use before and after enforcement efforts in their jurisdictions.

4. Determine what motivates a State's population.
 - a. Conduct surveys or focus groups with sub-populations of interest to gauge responses to media and law enforcement approaches.
 - b. Localize media efforts.

The study researchers believe that all of these represent potentially productive improvements that a low-use State can make. These factors certainly will vary in importance as a function of where they will be applied. Based on the data collected, the experience of the researchers, and the comments from the highway officials in the high-use States, the presence of a full-time, experienced, and fully dedicated occupant protection specialist in the SHSO is, perhaps, the most important single step a low performing State can take to begin the process of increasing seat belt use.

References

- Chen, Y. Y. (2015). *Seat belt use in 2014—use rates in the states and territories* (Report No. DOT HS 812 149). Washington, DC: National Highway Traffic Safety Administration. Available at www-nrd.nhtsa.dot.gov/Pubs/812149.pdf
- Drexel University (2015). States - Ranked by Size & Population (web page). Retrieved from the "ipl2: information you can trust" [sic, now defunct] web page at www.ipl.org/div/stateknow/popchart.html
- Federal Bureau of Investigation. (2016). *Crime in the United States by State 2014* (web page). Retrieved from the FBI website at www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2014/crime-in-the-u.s.-2014/tables/table-5
- Governors Highway Safety Association (2015). *Highway Safety Laws by State*. Retrieved from the GHSA website at www.ghsa.org/html/stateinfo/bystate/
- Hedlund, J., Gilbert, H., Ledingham, K., & Preusser, D. (2008). *How States achieve high seat belt use rates* (Report No. DOT HS 810 962). Washington, DC: National Highway Traffic Safety Administration. Available at <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/810962>
- Henry J. Kaiser Family Foundation. (2015a). *Percent of Adults Who are Overweight or Obese*. Retrieved from the Kaiser Foundation website at <http://kff.org/other/state-indicator/adult-overweightobesity-rate/>
- Henry J. Kaiser Family Foundation. (2015b). *Percent of Adults Who Smoke*. Retrieved from the Kaiser Foundation website at <http://kff.org/other/state-indicator/smoking-adults/#notes>
- Insurance Institute for Highway Safety. (2015). *State by State Fatal Crash Totals*. Retrieved from the IIHS website at www.iihs.org/iihs/topics/t/general-statistics/fatalityfacts/state-by-state-overview/2005#Fatal-crash-totals
- Iowa State University. (2015, December 4). *Urban Percentage of the Population for States, Historical*. Retrieved from the ISU web page at www.icip.iastate.edu/tables/population/urban-pct-states
- National Highway Traffic Safety Administration (2015). *Fatality Analysis Reporting System (FARS)*. Retrieved from www.nhtsa.gov/FARS
- National Highway Traffic Safety Administration. (n.d.). *Driving Safety*. Washington, DC: Author. Retrieved from www.nhtsa.gov/Driving+Safety
- National Highway Traffic Safety Administration. (n.d.b). *State Highway Safety Documents*. (web page). Washington, DC: Author. Retrieved January 28, 2016, from www.nhtsa.gov/links/StateDocs/pages/SafetyPlans.htm

- Nichols, J. L., & Solomon, M. G. (2013, May). *Click It or Ticket Evaluation, 2011* (Report No. DOT HS 811 779). Washington, DC: National Highway Traffic Safety Administration. Available at www.nhtsa.gov/staticfiles/nti/pdf/811779.pdf
- Nichols, J. L., & Solomon, M. G. (2013, May). *Click It or Ticket Evaluation, 2010* (Report No. DOT HS 811 778). Washington, DC: National Highway Traffic Safety Administration. Available at www.nhtsa.gov/staticfiles/nti/pdf/811778.pdf
- Solomon, M. G., Tison, J., and Cosgrove, L. (2013). *Click It or Ticket Evaluation, 2008-2009* (Report No. DOT HS 811 536). Washington, DC: National Highway Traffic Safety Administration. Available at www.nhtsa.gov/staticfiles/nti/pdf/811536.pdf
- Solomon, M. G., Tison, J., Preusser, D. F., Chaudhary, N. K. (2009). *Evaluation of the May 2007 Click It or Ticket Mobilization* (Report No. DOT HS 811 239). Washington, DC: National Highway Traffic Safety Administration.
- United Health Foundation. (2015). *State public health statistics*. Retrieved from the UHF website at www.americashealthrankings.org/
- University of Wisconsin Population Health Institute (2015). *County Health Rankings*. Robert Wood Johnson Foundation. Retrieved from the Population Health Institute website at www.countyhealthrankings.org/
- University of Wisconsin Population Health Institute (2017). Education (web page). Retrieved from the County Health Rankings & Roadmaps web page at www.countyhealthrankings.org/our-approach/health-factors/education
- U.S. Bureau of Labor Statistics. (2014). *Characteristics of Minimum Wage Workers, 2013* (p. 17). Retrieved from the Census Bureau website at www.bls.gov/cps/minwage2013.pdf
- U.S. Census Bureau. (2015, December 4). *State and County QuickFacts*. Retrieved from the Census Bureau website at <http://quickfacts.census.gov/qfd/index.html>

DOT HS 812 435
July 2017



U.S. Department of Transportation
**National Highway Traffic Safety
Administration**



13121-070617-v3