

STATUS REPORT

INSURANCE INSTITUTE
FOR HIGHWAY SAFETY

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Alarmed by drivers doing this, legislators in state after state have enacted laws that

BAN TEXTING

by all drivers. As well intentioned as they are, these laws haven't accomplished what the

legislators intended. They haven't reduced crashes. Rather, in a perverse twist the frequency of insurance claims filed for vehicle damage sustained in crashes actually increased in 3 of the 4 states that were studied, after laws took effect that prohibited drivers from texting.

"These findings indicate that texting bans might even increase the risk associated with texting for drivers who continue to do so despite the laws," says Adrian Lund, president of both the Insurance Institute for Highway Safety and affiliated Highway Loss Data Institute (HLDI).

The new research is from HLDI, and the findings are consistent with those of a previous HLDI study on driver cellphone use. The previous study found that banning hand-held phone use while driving didn't cut crashes (see *Status Report*, Feb. 27, 2010; on the web at iivs.org).

HLDI researchers calculated rates of claims filed under collision coverage for vehicles up to 9 years old during the months immediately before and after driver texting was banned in California (January 2009), Louisiana (July 2008), Minnesota (August 2008), and Washington (January 2008).

that hand-held phone bans aren't reducing crashes, "call into question the way policymakers are trying to address the problem of distracted driving crashes," Lund adds. "They're focusing on a single manifestation of distracted driving and banning it. This ignores the endless sources of distraction and relies on a ban on one source or another to solve the whole problem."

Fluctuations from month to month in the rates of collision claims in HLDI's 4 study states with texting bans for all drivers didn't change much from before to after the bans were enacted (see charts on facing page). Nor did the patterns differ much from those in nearby

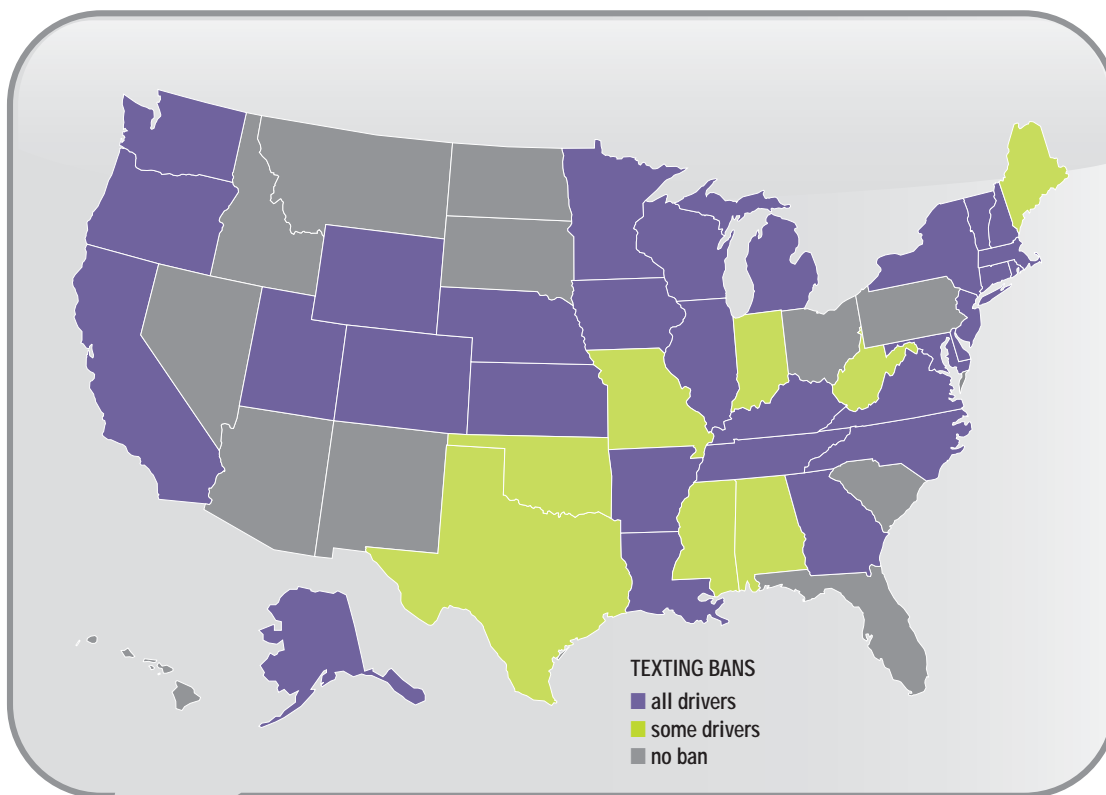
states that didn't ban texting for all drivers during the study period. To the extent that the crash patterns did change in the study states, they went up, not down, after the bans took effect. The increases varied from 1 percent more crashes in Washington to about 9 percent more crashes in Minnesota (the result in Washington isn't statistically significant).

Young motorists are more likely than older people to text while driving. In all 4 of the study states, crashes increased among drivers younger than 25 after the all-driver bans took effect. In

California, Louisiana, and Washington, the increases for

young drivers were greater than for drivers 25 and older. The largest crash increase of all (12 percent) following enactment of a texting ban was among young drivers in California.

"The point of texting bans is to reduce motor vehicle crashes, and by this essential measure the laws are ineffective," Lund points out. He cautions that "finding no reduction in crashes, or even a small increase, doesn't mean it's safe to text and drive, though.



THIRTY STATES AND THE DISTRICT OF COLUMBIA BAN TEXTING BY ALL DRIVERS. ANOTHER 8 STATES BAN SOME DRIVERS, MOSTLY BEGINNERS, FROM TEXTING, WHILE 12 STATES DON'T BAN TEXTING AT ALL.

Comparable data were collected in nearby states where texting laws weren't substantially changed during the time span of the study. This controlled for possible changes in collision claim rates that were unrelated to the bans — changes in the number of miles driven due to the economy, seasonal changes in driving patterns, etc.

HLDI's new findings about texting, together with this organization's previous finding

There's a crash risk associated with doing this. It's just that bans aren't reducing this crash risk."

An Insurance Institute for Highway Safety study that relied on driver phone records found a 4-fold increase in the risk of injury crashes associated with phoning (see *Status Report*, July 16, 2005; on the web at iihs.org). A study in Canada found a 4-fold increase in the risk of crashes involving property damage. The crash risk associated with texting while driving hasn't been quantified as precisely, but it may be comparable, if not greater, than the risk associated with phoning.

"Neither texting bans nor bans on hand-held phone use have reduced crash risk," Lund says.

Noncompliance is a likely reason texting bans aren't reducing crashes. Survey results indicate that many drivers, especially younger ones, shrug off these bans. Among 18-24 year-olds, the group most likely to text, 45 percent reported doing so anyway in states that bar all drivers from texting.

DRIVERS MIGHT HAVE RESPONDED TO THE LAWS PROHIBITING TEXTING BY MOVING THEIR PHONES DOWN AND OUT OF SIGHT WHEN THEY TEXTED, IN RECOGNITION THAT WHAT THEY WERE DOING WAS ILLEGAL. THIS COULD EXACERBATE THE RISK OF TEXTING AND DRIVE CRASH RATES UP INSTEAD OF DOWN. IT'S A PERVERSE RESULT OF LAWS INTENDED TO REDUCE CRASH RISK.

This is just shy of the 48 percent of drivers who reported texting in states without bans. Many respondents who knew it was illegal to text said they didn't think police were strongly enforcing the bans.

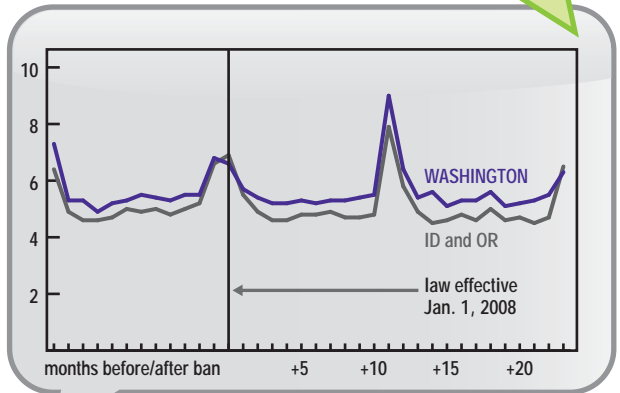
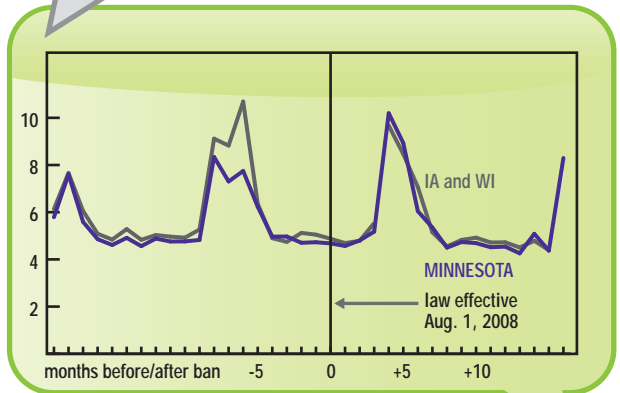
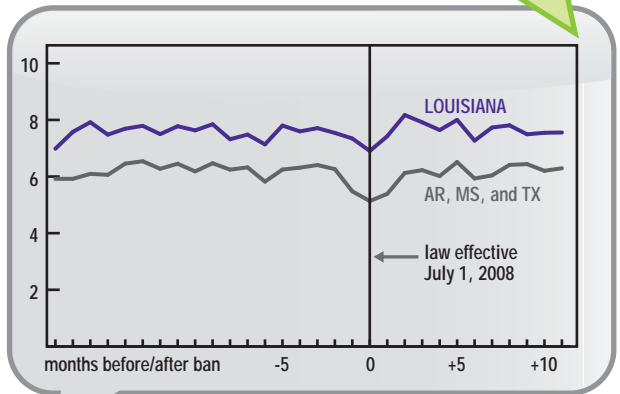
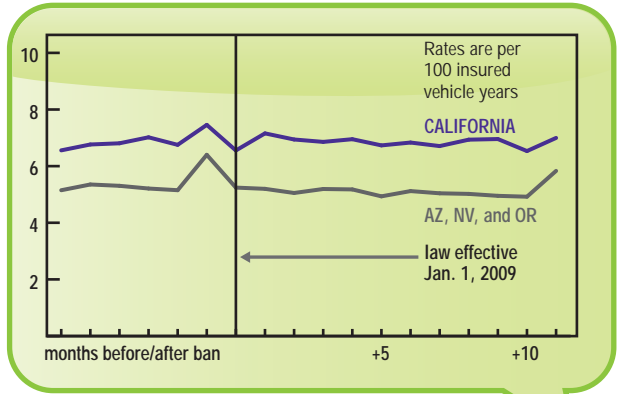
"But this doesn't explain why crashes increased after texting bans," Lund points out. "If drivers were disregarding the bans, then the crash patterns should have remained steady. So clearly the drivers did respond somehow to the bans, and what they might have been doing was moving their phones down and out of sight when they texted, in recognition that what they were doing was illegal. This could exacerbate the risk of texting by taking drivers' eyes further from the road and for a longer time."

Using a driving simulator, researchers at the University of Glasgow found a sharp decrease in crash likelihood when participants switched from head-down to head-up displays. This suggests that it might be more hazardous for a motorist to text from a device that's hidden from view on the lap or a vehicle seat.

Texting in general is on the increase. Wireless phone subscriptions numbered 286 million as of December 2009, up 47 percent from 194 million in June 2005. Text messaging is increasing, too. It went up by about 60 percent in 1 year alone, from 1 trillion messages in 2008 to 1.6 trillion in 2009.

The District of Columbia was the first US jurisdiction to ban all motorists from texting while driving. This was in 2004, and since then 30 states have followed suit. Nearly half of these bans have been enacted in 2010.

COLLISION CLAIMS PER 100 INSURED VEHICLE YEARS BEFORE & AFTER LAWS BANNING ALL DRIVERS FROM TEXTING



FEDERAL STUDY OF ANTILOCKS IS JUNK SCIENCE

A poorly designed government study of antilock brakes threatens to lock up the wheels of an effort to require this safety feature on all new motorcycles. Relying on flawed methods, the authors fail to find any significant effect on crash risk from antilocks. A broad spectrum of research by the Institute and others has found otherwise.

More than 5,000 motorcyclists were killed in crashes in 2008. Such deaths continued to grow in recent years despite an overall drop in traffic deaths. More people have started riding motorcycles, with bike registrations nearly doubling from 2000 to 2008. Given that surge, it's important to look for ways to make riding safer.

Brakes are a good place to start because stopping a motorcycle is much more complicated than stopping a car. Most motorcycles have separate controls for the front and rear brakes, and braking too hard can lock up a wheel, causing a fall. Improper braking has been shown to be a common cause of crashes. Antilocks help by automatically reducing brake pressure when a lockup is about to occur and increasing it again after traction is restored.

The National Highway Traffic Safety Administration (NHTSA) announced in its 2009-11 agenda that it was considering an antilock requirement for motorcycles. The Institute strongly urged the agency to adopt the rule and reiterated this in a recent letter to the agency, warning that the new study should be ignored because it contributes nothing reliable to what's already known about the benefits of antilock brakes on motorcycles.

The agency's own studies have shown that motorcycle antilocks reduce stopping distances on the test track. Other studies have quantified the benefits using crash reconstructions. Two recent statistical analyses from the Institute and the affiliated Highway Loss Data Institute provide even more support for motorcycle antilocks (see *Status Report*, March 31, 2010; on the web at iihs.org).

Institute researchers found that motorcycles with antilock brakes are 37 percent less likely to be involved in fatal crashes than bikes without antilocks. The researchers looked at crashes from 2003

to 2008 and measured the exposure of both types of motorcycles by looking at vehicle registrations. A separate analysis of insurance claims found that motorcycles with antilocks have 22 percent fewer damage claims per insured vehicle year than the same models without antilocks.

"There's ample evidence that motorcycle antilocks prevent crashes and save lives," says Institute president Adrian Lund. "Unfortunately, NHTSA decided to do its own study using a flawed methodology. The agency should disregard its latest findings, which only serve to muddle the issue."

NHTSA's report is an apparent response to the Institute's study of fatal crashes. The authors point out that Institute researchers weren't able to control for possible differences in the riding habits of people who buy motorcycles with antilocks compared with people whose bikes don't have the feature. But the government researchers didn't consider the Highway Loss Data Institute analysis of collision claims. This study does take into account factors known to affect crash rates including rider age and sex and a bike's location, and the findings still show a significant benefit of antilocks. Instead, the government researchers tried to solve the problem by comparing crashes that would be affected by antilocks with a control group of crashes in which antilocks are deemed irrelevant. The problem, Lund says, is that the categories are hardly clear-cut.

Agency researchers performed 2 versions of their analysis using different definitions of the control group. First, they defined this group strictly as





crashes in which a motorcycle was stationary or moving very slowly. However, such crashes are so rare that, as the researchers themselves acknowledge, it's hard to draw any conclusions from them.

In the second version of NHTSA's analysis, the control group includes all crashes in which a motorcycle rider wasn't at fault but the driver of another vehicle was. In this case, the methodological problem is the inclusion of many crashes in which antilocks are anything but irrelevant. For instance, a rider going straight who has to brake suddenly to avoid hitting someone improperly turning left from the opposite lane wouldn't be at fault, although antilock brakes could save the life of a rider in this situation.

"It's hard to find many crashes in which effective braking is irrelevant," Lund says.

THERE'S AMPLE EVIDENCE THAT ANTILOCK BRAKES ON MOTORCYCLES PREVENT CRASHES AND SAVE LIVES. UNFORTUNATELY, THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION'S STUDY OF ANTILOCKS USES A FLAWED METHODOLOGY. THE AGENCY SHOULD DISREGARD ITS LATEST FINDINGS, WHICH ONLY SERVE TO MUDDLE THE ISSUE OF WHETHER TO MANDATE MOTORCYCLE ANTILOCKS.

"The agency's attempt to analyze the issue this way adds nothing to what we know about antilocks and certainly doesn't refute earlier studies showing the benefits of antilock brakes."

"Motorcycle antilock braking systems and crash risk estimated from case-control comparisons," along with the Institute's letter to NHTSA, is available at regulations.gov, Docket No. NHTSA-2002-11950.

COST OF CRASHES AMOUNTS TO \$500 PER DRIVER A YEAR

The economic toll of crash-related injuries tops \$99 billion a year, with deaths accounting for more than half that amount, the Centers for Disease Control and Prevention (CDC) estimates in a study breaking down the impact of fatal and nonfatal injuries by vehicle type and the age and gender of the injured people. Young drivers and motorcyclists represent more than a third of the costs, and men run up a disproportionately high share of the tab.

Based on 2005 data, the analysis assesses the societal costs for medical care, treatment, rehabilitation, and lost wages and productivity. There were more than 3.7 million deaths and injuries on US roads that resulted in medical care in 2005. The related costs amounted to \$336 for every person in the United States, or nearly \$500 for every licensed driver. CDC says the findings “are especially relevant to public policy because the government pays for some of these losses.”

Among people who survived their crash injuries, an estimated \$28 billion was spent on hospital stays and \$14 billion on emergency room visits.

Injuries involving people in cars, pickup trucks, vans, SUVs, heavy trucks, and buses accounted for 71 percent, or \$70 billion, of total medical

care and productivity losses. Costs for motorcyclists and pedestrians were disproportionately high, given their injury incidence. Motorcyclists made up 6 percent of all injuries in 2005 and 12 percent of the costs, while pedestrians accounted for 5 percent of injuries and 10 percent of total costs. In contrast, bicyclists made up 13 percent of injuries and 6 percent of costs.

Men accounted for about half of the crash injuries but at \$74 billion nearly three-quarters of the associated costs. Men were more than twice as likely to die in crashes, compared with women, representing 70 percent of fatal injuries and 79 percent of related costs. Men’s lifetime injury costs per capita were 3 times as high as women’s, mainly due to historically higher salaries.

Young people 15-24 years old were over-represented in crash injuries, deaths, and costs. This group made up 28 percent of all fatal and nonfatal crash injuries and 31 percent of the costs, or \$31 billion, while representing only 14 percent of the population. They had the highest lifetime injury costs

per capita. Elderly adults had the lowest. For example, men 65 and older had per capita costs of \$118 versus \$1,249 for men 20-24 years old and \$901 for boys 15-19.

Tougher laws and enforcement could trim the tab. CDC points out that “comprehensive child restraint use laws and primary seat belt laws could reduce the \$3.6 billion annual bill for child occupant injuries and the \$64 billion bill for teen and adult occupant injuries.”

“Incidence and total lifetime costs of motor vehicle-related fatal and nonfatal injury by road user type, United States, 2005” by R.B. Naumann et al. appears in the September issue of *Traffic Injury Prevention*.



DOUBLE-RED SIGNAL REDUCES CRASHES AT CROSSWALKS

A relatively new type of crosswalk signal that stays dark until a pedestrian activates it can reduce crashes at intersections where a full-fledged traffic signal isn't warranted, a study sponsored by the Federal Highway Administration has found.

The High-Intensity Activated Crosswalk, or HAWK, beacon consists of 2 red lights over 1 yellow and is typically marked with large pedestrian crossing signs. When a pedestrian presses a button, the signal flashes yellow, then switches to solid yellow. Then both red lights shine, and pedestrians can start crossing. Finally, the device switches to flashing red, meaning drivers can proceed as soon as pedestrians have cleared the lane.

The city of Tucson, Arizona, developed HAWK signals in the late 1990s and now uses them at more than 100 sites. Other cities have since adopted HAWK, also known as a pedestrian hybrid beacon. Less expensive than full signals, HAWKs have been shown to be effective in getting drivers to yield to pedestrians on major streets with multiple lanes or high speeds, and they're being tested for use at roundabouts. The flashing red phase allows vehicle traffic to resume quickly.

Traffic engineers have several tools to help people cross a major road. A familiar one is a standard, red-yellow-green traffic light that remains green until a pedestrian pushes a button. However, under the *Manual on Uniform Traffic Control Devices*, such signals should only be used midblock. If a traffic light is at an intersection, it must be a full signal that controls the side street, too.

Tucson officials wanted to allow pedestrians to cross at intersections but didn't want full signals at residential side streets because they tend to encourage cut-through traffic. The solution devised by Richard Nassi, until recently Tucson's transportation chief, was the HAWK beacon. It controls traffic at intersections on main roads only, while side streets still have a stop sign.

The Federal Highway Administration's study, conducted by researchers at the Texas Transportation Institute, looked at 21 HAWK sites and compared the number of crashes in the 3-year period before the signals were installed with the number of crashes after.

The HAWK signals did their job. Pedestrian crashes near the intersections tumbled 59 percent, and other types of crashes also went down. Total crashes fell 14 percent, and severe crashes fell 13 percent. These results take into account changes in the number of crashes at nearby intersections without HAWKs or other traffic signals.

The study also examined a smaller group of crashes that were specifically reported as

2009 traffic control devices manual. However, recommended use differs from the practice in Tucson, where the vast majority of HAWKs are on major arteries at intersections where side streets are controlled by stop signs. The guidelines say the signals should be installed at least 100 feet from side streets or driveways controlled by stop or yield signs to avoid driver confusion.

Nassi says he expects the National Committee on Uniform Traffic Control Devices, of which he is a member, to ask the Federal Highway Administration to reconsider that guidance in light of the recent study.

"The perceived danger is not turning out to be a danger," he says. "HAWKs provide



intersection-related. In this analysis, pedestrian crashes declined 51 percent, total crashes dropped 29 percent, and severe crashes fell 15 percent.

HAWK is rapidly gaining acceptance, and the pedestrian hybrid was included in the

another pedestrian safety tool at both intersections and midblock locations."

"Safety effectiveness of HAWK pedestrian treatment" by K. Fitzpatrick and E.S. Park appears in the *Transportation Research Record*, No. 2140/2009.

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