

# Status Report

Insurance Institute for Highway Safety | Highway Loss Data Institute

# Distracted driving

Cellphone manipulations up  
57 percent over prior survey

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- ▶ Modest use for 'Do Not Disturb While Driving' phone blocker
- ▶ HLDI analysis of Hyundai/Kia fires points to possible engine problem



**M**anipulating a cellphone was a contributing factor in more than 800 crash deaths on U.S. roads during 2017 amid a marked increase in the percentage of drivers observed interacting with cellphones, new IIHS research indicates. The estimated number of deaths, however, still represents a fraction of the overall crash death toll.

Virginia drivers observed in a 2018 IIHS roadside survey were 57 percent more likely to be manipulating a cellphone than drivers in a 2014 survey. The percentage of drivers observed manipulating a phone rose from 2.3 percent in 2014 to 3.4 percent in 2018.

At the same time, drivers were less likely to be seen simply holding a cellphone or talking on a hand-held phone than in the prior survey. The finding is consistent with research indicating that drivers are talking on hand-held phones less and fiddling with them more often than in recent years.

In 2018, 3.7 percent of drivers in Northern Virginia were observed talking on a hand-held cellphone, compared with 4.1 percent of drivers in 2014, while 2.8 percent of drivers in 2018 were seen holding a cellphone, compared with 4.9 percent in the prior survey.

The problem of distracted driving, especially cellphone use, continues to raise concerns. A 2018 national survey by the AAA Foundation for Traffic Safety found that 64

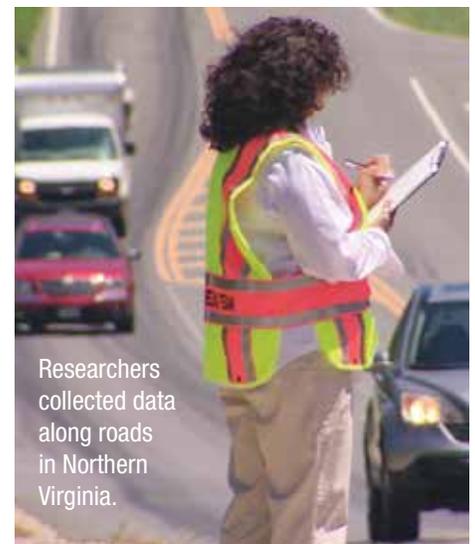
percent of respondents consider distracted driving a much bigger problem today than it was three years ago.

### Estimating crash risk

About 37,000 people died in motor vehicle crashes in 2017, the most recent year of data available. Assuming the prevalence of phone manipulation nationwide rose as it did in Northern Virginia to 3.4 percent, and assuming, based on the latest research, that fatal crash risk is 66 percent higher when manipulating a phone, then more than 800 of the estimated crash deaths in 2017 could be attributed to phone manipulation.

This estimate is based on work by IIHS and other researchers describing how the estimated risk and prevalence of phone use can be combined to estimate the number of crash deaths that could be attributed to phone use in a given year (see *Status Report*, Feb. 27, 2010, at [iihs.org](http://iihs.org)). The 66 percent increase in fatal crash risk associated with manipulating a cellphone relative to driving when other secondary behaviors were present is a finding of a 2018 study by the AAA Foundation for Traffic Safety and the Virginia Tech Transportation Institute.

“The latest data suggest that drivers are using their phones in riskier ways,” says David Kidd, who co-authored the study and is a senior research scientist with HLDI. “The observed shift in phone use



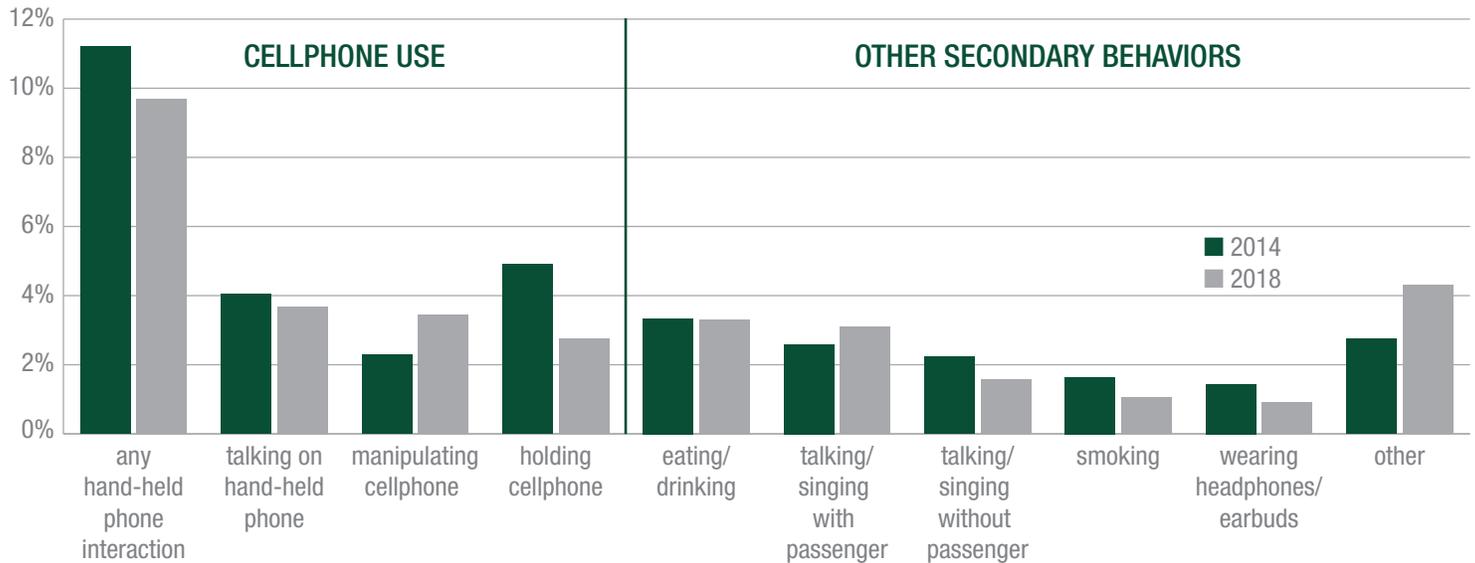
Researchers collected data along roads in Northern Virginia.

is concerning because studies consistently link manipulating a cellphone while driving to increased crash risk.”

Cellphone use affects how drivers scan and process information from the roadway. Drivers generally take their eyes off the road to dial, send texts and browse the web on a hand-held phone — all activities that fall under the rubric of manipulating the phone. Drivers engaged in cellphone conversations tend to concentrate their gaze toward the center of the roadway, but their attention still may be diverted from driving and make it difficult for them to process what they are looking at.

# Overall cellphone use fell between 2014 and 2018 as drivers interact with phones in different ways

Percent of vehicles observed during the daytime, by year



## Tracking trends in distraction

Procedures for the 2018 update followed those used in 2014 (see *Status Report*, March 31, 2015). IIHS stationed observers at 12 locations across four Northern Virginia communities, on straight stretches of roads, at signalized intersections and at roundabouts in March 2018. Observers noted nearly 12,000 drivers in the 2018 survey and more than 14,000 drivers in 2014 during the morning, afternoon or early evening on weekdays. Researchers noted if drivers were engaging in one or more of 12 visible secondary behaviors while moving or stopped at red lights.

About 23 percent of drivers were engaged in one or more distracting activities:

- ▶ Talking on hand-held cellphone
- ▶ Manipulating hand-held cellphone (excludes looking at phone in mount)
- ▶ Simply holding hand-held cellphone (i.e. not obviously manipulating or talking)
- ▶ Wearing Bluetooth earpiece or headset with mic
- ▶ Wearing headphones or ear buds
- ▶ Manipulating in-vehicle system (touching radio, climate control, touchscreen display or other controls; excludes operating stalks or buttons on steering wheel)

- ▶ Manipulating or holding mobile electronic device other than cellphone
- ▶ Talking or singing
- ▶ Eating or drinking
- ▶ Smoking
- ▶ Grooming
- ▶ Other (reaching for object, reading print material, adjusting sun visor, putting on glasses, holding another object)

“When people talk about distracted driving, most often cellphones are the focus, but drivers are distracted by other secondary behaviors more often than cellphones,” Kidd points out. “Things as simple as drinking coffee or talking to your kids (see p. 6 »)



# Talking not texting accounts for most phone use, drivers say

**D**rivers say they use their smartphones more often for calls than for texting, or reading or sending emails, a nationwide survey of smartphone users by IIHS indicates.

IIHS in January to March 2018 surveyed adult drivers who own smartphones to see how they use them while driving. Eighty percent of the 800 drivers surveyed reported talking on their phone while driving in the previous 30 days, and 30 percent said they talk on the phone daily. Most drivers who reported talking on the phone said they only do so hands-free using voice commands.

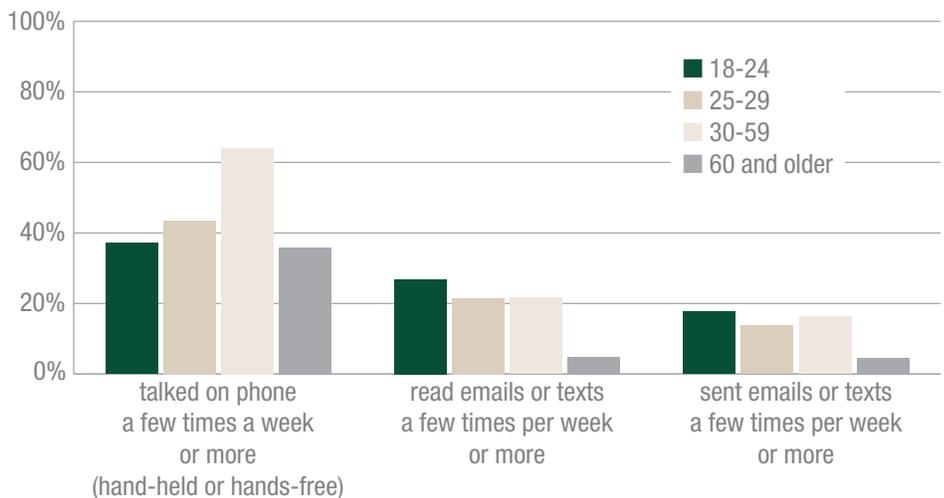
When IIHS conducted the survey, 15 states and the District of Columbia banned talking on a hand-held cellphone while driving. Georgia in July 2018 became the 16th state with a hand-held phone ban. Texting is banned for all drivers in 47 states and D.C.

Thirty-one percent of respondents in states without a hand-held phone ban reported that they sometimes engage in hand-held conversations, compared with 14 percent of drivers surveyed in states with a hand-held phone ban.

Thirty-eight percent of drivers surveyed said they had read emails or texts while driving during the past month, and a third surveyed reported that they sent emails or texts. This percentage is in line with the

## Percentage of respondents who engaged in three cellphone behaviors in the preceding month by driver characteristic

IIHS national survey of smartphone users, 2018



2017 Traffic Safety Culture Index survey by the AAA Foundation for Traffic Safety finding that about a third of respondents said they had typed or sent a text or email while driving in the past 30 days.

“Manipulating a cellphone increases the chances of a crash, so it is worrisome that drivers admit to texting, even though the practice is banned in most states,” says Jessica Cicchino, IIHS vice president for research, who co-authored the study with Ian

Reagan, a senior research scientist with the Institute.

Middle-age drivers gab most often. Sixty-four percent of drivers age 30 to 59 reported talking on their phone a few times a week or more either hands-free or hand-held, compared with 44 percent of drivers ages 25-29, 37 percent of drivers ages 18-24 and 36 percent of drivers age 60 and older.

In the survey, men were 22 percent more likely to report making phone calls a few



# Modest use for iPhone 'Do Not Disturb' blocker

One way to fight distracted driving is to take smartphones out of the equation by limiting their functionality while the vehicle is moving. The catch, though, is convincing drivers to use a blocker app if installed. A new IIHS survey found that only 1 in 5 owners of iPhone 6 and newer phones have Apple's Do Not Disturb While Driving feature set to automatically turn on when driving or connected to their car's Bluetooth system.

Smartphone blocker apps use sensors and proximity to known network connections to detect driving. The apps generally work when vehicles are in motion and can silence the phone, redirect incoming calls to voicemail or respond to text messages with a preprogrammed message. Users must opt in to activate the apps.

Apple's Do Not Disturb While Driving cellphone blocker has been included in iPhone software updates since iOS 11 was released in fall of 2017 for iPhone 6 and newer models. The first time owners use a compatible iPhone or download the update, they are prompted to try the Do Not Disturb While Driving feature. Users can choose from two options: "turn on while driving" or "not now."

The Do Not Disturb feature mutes incoming calls and notifications and sends auto-replies to text messages. Users can override the feature by tapping the "do not disturb" message that appears when the phone is handled and selecting a subsequent "I'm not driving" option. Drivers still can use Apple's Siri voice assistant or make and receive hands-free calls via Bluetooth. They also can elect to always allow calls from the people in their "favorites" contact list. If using the phone for navigation, maps and directions still will appear on the lock screen.

Selecting the "not now" option in response to the initial prompt means users will have to manually activate the blocker in their phone's settings menu before each drive if they want to use it. Users also must manually activate the feature if their iPhone is connected via Apple CarPlay to their vehicle's infotainment system.

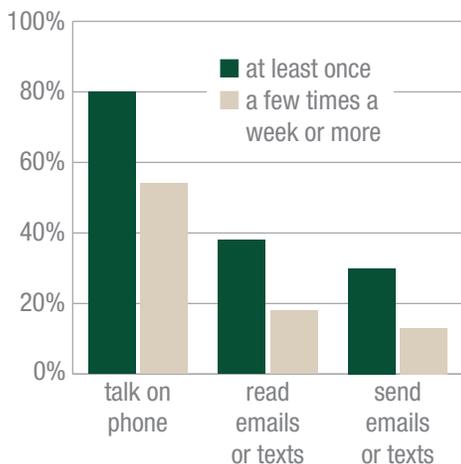
IIHS conducted the national telephone survey of drivers 18 and older who own a smartphone and drive at least once a week during the first three months of 2018. Of the 800 respondents who met the requirements for the full survey, half owned iPhones compatible with Apple's Do Not Disturb While Driving feature, and the remainder owned older iPhones or Android cellphones.

Most drivers with compatible iPhones who had used the feature within the past month were aware that they could override it but said they seldom opt to do so.

About 3 of 4 respondents who had used the cellphone blocker feature within the past month agreed that it isn't annoying and should be an automatic feature for all cellphones.

## Drivers reporting various types of smartphone use in past 30 days

IIHS national survey of smartphone users, 2018



times a week or more while driving in the past 30 days than women.

Smartphone ownership in the U.S. is widespread. In 2018, 77 percent of the U.S. population owned a smartphone, up from 35 percent in 2011, according to the Pew Research Center.

For a copy of "Do Not Disturb While Driving — use of cellphone blockers among adult drivers" by I.J. Reagan and J. B. Cicchino, email [StatusReport@iihs.org](mailto:StatusReport@iihs.org). ■



## Apple's blocker app has been included in iPhone iOS updates since fall 2017.

People who chose not to automatically engage the blocker said they mainly did so because they needed to access their phone while driving and were concerned about missing important notifications — or they weren't aware that the app was in manual mode or existed at all.

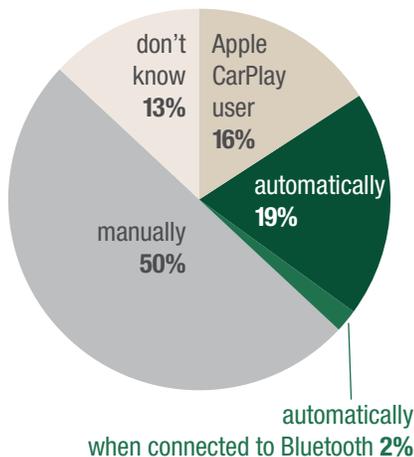
The manual user group appeared open to revisiting setting the feature to activate automatically. Nearly 40 percent reported »

Smartphone owners aren't rushing to use blocker apps, but they do seem open to reminders nudging them to try them. Follow-up prompts might boost their use.



### Do Not Disturb While Driving activation setting

Most iPhone owners surveyed don't use it



(« from p. 5) that they wouldn't be frustrated at all if they received a reminder prompt from Apple encouraging them to try the application again. And 27 percent of the manual group said they would be somewhat or very likely to try Do Not Disturb if they received a prompt.

Nineteen percent of drivers with Androids

or older iPhones reported having a cellphone blocker, but only about half of this group said they use it all or almost all the time when driving. Most drivers with Androids and older iPhones somewhat or strongly agreed that cellphone providers should put blockers on phones that work like Apple's app.

Drivers who said they used blockers were less likely to report making calls and sending emails or texts while driving than drivers who didn't use them. The results varied between people who used Do Not Disturb and drivers who used other blockers.

"Even though smartphone owners aren't rushing to use blocker apps, they do seem open to reminders nudging them to reconsider," says Ian Reagan, the study's co-author and a senior research scientist for the Institute. "Periodic follow-up prompts from Apple might boost use of Do Not Disturb While Driving's automatic mode and help to curb at least one form of driver distraction."

For a copy of "Do Not Disturb While Driving — use of cellphone blockers among adult drivers" by I.J. Reagan and J. B. Cicchino, email [StatusReport@iivs.org](mailto:StatusReport@iivs.org). ■

(« from p. 3) can take your attention away from the road."

About 14 percent of drivers were engaged in nonphone-related secondary behaviors in 2014 and 2018, which exceeded the proportion of drivers seen using phones in both years. Relative to 2014, drivers were more likely to be observed manipulating an in-vehicle system, grooming themselves, or manipulating or holding an electronic device other than a phone after researchers adjusted for community, perceived driver gender and age, time of day and roadway situation.

Drivers in 2018 were less likely to be talking or singing while driving alone, smoking, or wearing headphones or earbuds. The prevalence of eating or drinking, talking or singing with a passenger present, wearing a Bluetooth device, or engaging in some other visible secondary behavior wasn't significantly different between 2014 and 2018.

"We didn't find evidence of an increase in distracted driving overall between the 2014 and 2018 roadside surveys," Kidd says. "For cellphone-related distraction in general, we expect a continued shift in the way people interact with the devices as the technology evolves."

The percentage of crash deaths related to distraction in recent years has hovered at about 8–10 percent of all crash deaths, data from the National Highway Traffic Safety Administration show. During the past three years, distraction-affected crash deaths have trended downward. The number of fatalities in distraction-affected crashes fell 9.3 percent from 3,490 in 2016 to 3,166 in 2017, representing 8.5 percent of total fatalities for the year. In 2015, 3,526 people were killed in distraction-affected crashes.

Fatality data likely underestimate the number of deaths caused by distracted drivers. Despite efforts to determine cellphone use by drivers in crashes, such data continue to be difficult to collect as they largely depend on people truthfully telling law enforcement officers what they were doing or voluntarily handing over their phones for inspection.

"Changes in the sources of distracted driving among Northern Virginia drivers in 2014 and 2018: A comparison of the results from two roadside observation surveys" by D.G. Kidd and N.K. Chaudhary appears in *Journal of Safety Research*, Volume 68. ■

# HLDI analysis of Hyundai/Kia noncrash fires points to small and turbocharged engines

**A**n elevated number of complaints about certain Hyundai and Kia models bursting into flames has prompted a recall campaign to fix faulty repairs that the affiliated companies say were carried out during previous recalls of 2011–14 Hyundai Sonatas, 2013–14 Hyundai Santa Fe Sports, 2011–14 Kia Optimas, 2012–14 Kia Sorentos and 2011–13 Kia Sportages.

Analysis by HLDI suggests that the companies are correctly targeting vehicles with small and/or turbocharged engines, though it's unclear whether their proposed remedy will eliminate the additional fire risk these models carry. HLDI research also points to an increased risk of fire for turbocharged engines generally, across brands.

In June 2018, the Center for Auto Safety petitioned the National Highway Traffic Safety Administration (NHTSA) to investigate potential defects in Kia Optima and Sorento and Hyundai Sonata and Santa Fe vehicles from certain model years. The petition, which pointed to a high number of fire reports unrelated to collisions, prompted HLDI to examine noncrash fire claims in the data it receives from insurers.

HLDI found that rates of noncrash fire claims were significantly higher for the 2011–13 Optima and Sonata than for other midsize sedans. The 2011–15 Sorento, 2012 Santa Fe and the 2013–14 Santa Fe Sport also had higher noncrash fire claim rates than other midsize SUVs. The Sportage, which wasn't part of the original petition, wasn't included in the analysis.

HLDI analysts shared these findings with NHTSA, and, based on those discussions, expanded the study to look at fire claim frequency by engine type. They found that the Hyundai and Kia vehicles with a 2.0-liter turbocharged engine had the highest frequency — 4.2 claims per 10,000 insured vehicle years — compared with 1.7 for the control vehicles. Hyundai and Kia models with a 2.4-liter engine also had an elevated noncrash fire claim frequency of 2.7. In contrast, Hyundai and Kia vehicles with a 3.3- or 3.5-liter engine had about the same rate of fire claims as the control group.



2014 Hyundai Santa Fe Sport 2.0T

**Hyundai and Kia vehicles with a 2.0-liter turbocharged engine have the highest frequency of noncrash fire claims, followed by 2.4-liter engine models. NHTSA is investigating both of these Theta II engines.**

For vehicles with the 2.0-liter turbocharged and 2.4-liter engines, fire risk went up dramatically as the vehicles aged.

The two engines were the focus of the original recalls by Hyundai and Kia. They are both from the Theta II engine family, which is the subject of ongoing NHTSA investigations. The higher fire rates HLDI found could be related to an issue with this engine type.

It's also possible that there is something specific to the turbocharged engine causing additional fire risk in that variant. A separate HLDI study found that, across brands, turbocharged and supercharged engines have higher noncrash fire rates than nonturbocharged engines. Turbocharged engines use recycled exhaust to increase power, allowing a smaller engine to match the power of a larger nonturbocharged one.

On the other hand, the problem may be unrelated to the engine. Reports also have linked a large number of fires, including

one in which a driver died, to the Kia Soul, and the Center for Auto Safety amended its original petition to add the 2010–15 Soul. The small car has a different type of engine from the vehicles that HLDI studied. The Soul wasn't part of Kia's earlier recall campaign and isn't named in the current one.

As news of the fresh recalls broke, NHTSA, which oversees such safety campaigns, was mostly closed due to the partial U.S. government shutdown. Hyundai and Kia said they would proceed anyway.

HLDI studies have helped NHTSA get to the bottom of such issues in the past. Last year, certain Smart ForTwo vehicles were recalled after HLDI found they had a much higher than normal noncrash fire claim frequency. The problem turned out to be connected to insulation in the engine compartment.

HLDI plans to continue looking at the issue and will add the Soul and the Sportage to any future studies. ■

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**Drivers are more likely to talk on a cellphone than send or read texts ▶ 4**

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**IIHS** is an independent, nonprofit scientific and educational organization dedicated to reducing the losses — deaths, injuries and property damage — from motor vehicle crashes.

**HLDI** shares and supports this mission through scientific studies of insurance data representing the human and economic losses resulting from the ownership and operation of different types of vehicles and by publishing insurance loss results by vehicle make and model.

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