



ZENDRIVE'S 2019 DISTRACTED DRIVING STUDY

Public Enemy No. 1

Phone Addicts replace drunk drivers as the most dangerous threat on the road.

April 2019

Introduction

Every April, to commemorate Distracted Driving Awareness Month, Zendrive shares insights from the largest dataset about how people drive. For our third annual Distracted Driving Study, we analyzed over 160 billion miles of driver data to uncover a dangerous new category of distracted drivers: Phone Addicts. This growing category of hyper-connected individuals exhibit a pattern of distracted behavior unlike any other group of risky drivers on the road **and you may be one of them.**

If one thing is certain, our driving patterns in 2018 cannot be carried into the future. 2019 will be a decisive year in the fight against driver phone use. If not curbed, this massive epidemic will lead to a significant rise in traffic fatalities and seismic challenges in the coming decade. While the hope of zero traffic fatalities remains alive, a serious threshold has been crossed in terms of the number of distracted drivers we should tolerate on public roads.

Last year, 6,227 pedestrians lost their lives to the hands of drivers who were most likely driving under the influence of a smartphone.¹ On a national level, drivers are 10 percent more distracted this year than last. And from out under the shadows, Phone Addicts have positioned themselves as public enemy number one, replacing drunk drivers as the ultimate threat on public roads.

Phone Addicts are glued to their phones, so they're more distracted, more dangerous, and more likely to cause a crash. They pick up their phones four times more than the average driver, use their phone six times longer than the general population, and are on the road longer than any other category of drivers. Phone Addicts are growing at a rapid pace, too. In just one year, the number of hardcore Phone Addicts doubled. Today, one in every twelve drivers on the road is a Phone Addict. But if these trends continue, as many as one in every five drivers could be in the phone addict category by 2022.

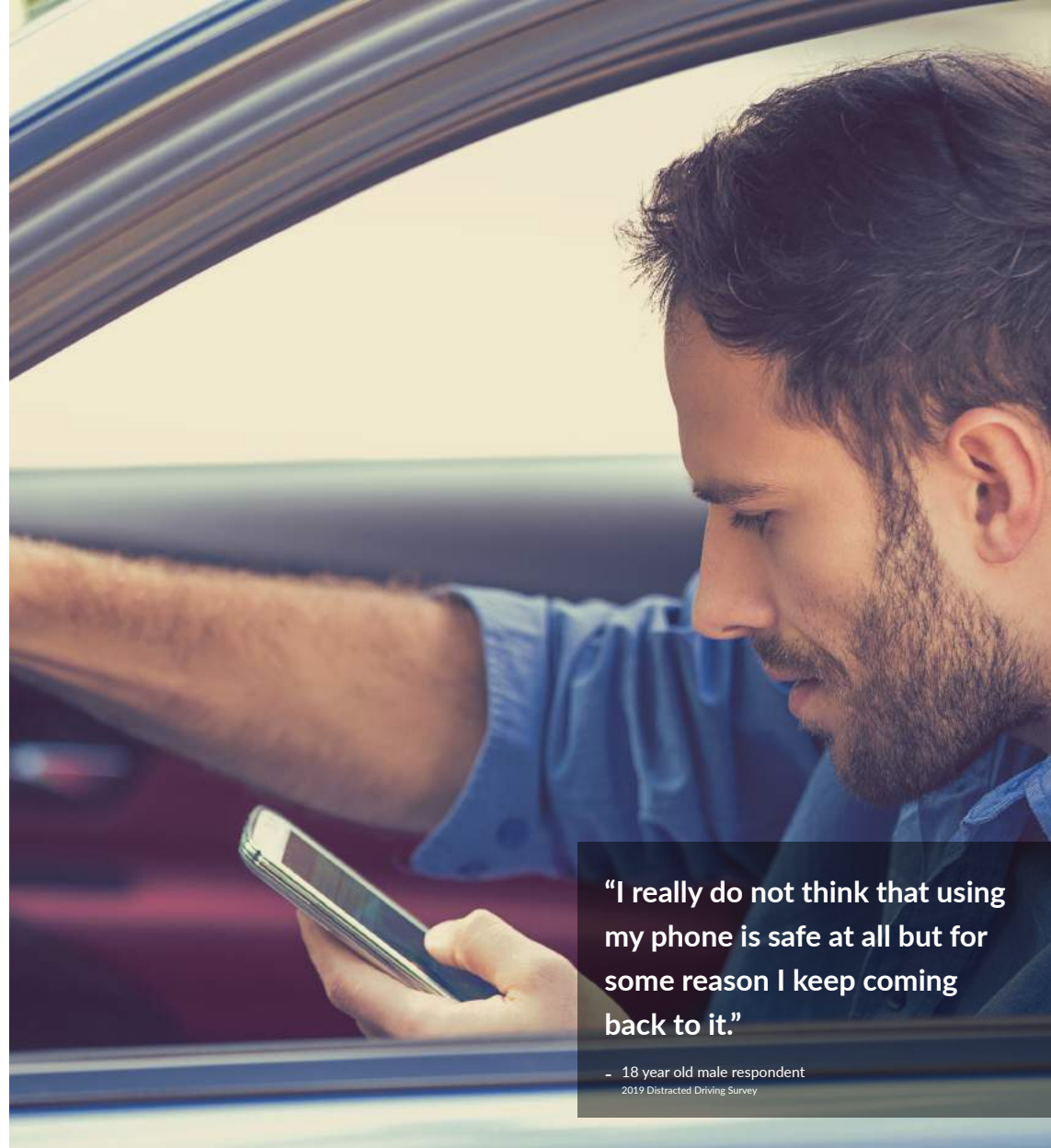
What's even worse is that most people don't realize they're Phone Addicts, or that their behavior is harmful. So any one of us could be a danger on the roads and not even know it.

After many years of reductions in traffic deaths and the growing consensus to end them, what's contributing to this increase, and what can we do about it?

¹ <https://www.wsj.com/articles/pedestrians-deaths-reach-highest-level-in-nearly-30-years-11551330060>

Phone Addicts are the New Drunk Drivers

Phone Addicts are at the tip of the iceberg of the distracted driving epidemic. They hide in plain sight, blatantly staring at their phones while driving down the road. On any given trip, they physically touch their phones four times more than the average driver. As a result, they spend six times longer watching their screens, with their eyes off of the road for 28 percent of their time spent on the road.



“I really do not think that using my phone is safe at all but for some reason I keep coming back to it.”

- 18 year old male respondent
2019 Distracted Driving Survey

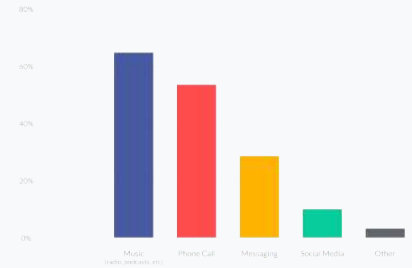
To better understand what drives this behavior, we launched our first ever Distracted Driving Survey, talking directly to drivers. We asked 500 US residents which apps they used the most while driving, and respondents listed phone and music apps ahead of social media and text messaging apps. This was surprising, but the most shocking truths were yet to come.

When asked about their opinion on distracted driving, 85 percent of respondents identified the issue as a very important problem. When asked to rate their overall driving safety, 90 percent claimed to be safe drivers, but 47 percent admitted to using their device so often they fall in the Phone Addict category. What do we do when almost half of all drivers on the road classify themselves “safe drivers” despite spending 10 percent of their time distracted behind the wheel?

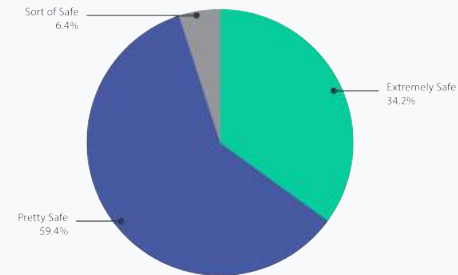
“I wish I was better at not being distracted by wanting to constantly change songs...I do not text and drive, but I like to FaceTime my friends while driving since it makes time go by faster.”

- 20 year old female respondent
2019 Distracted Driving Survey

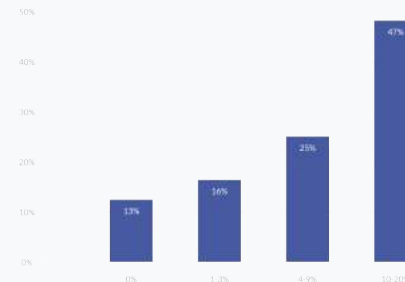
DRIVERS USE MUSIC AND PHONE CALLING APPS MOST WHILE DRIVING



93% OF PHONE ADDICTS SAY THEY'RE "PRETTY SAFE" OR "EXTREMELY SAFE" BEHIND THE WHEEL



NEARLY HALF SAY THEY'RE DISTRACTED ENOUGH TO BE A PHONE ADDICT BECAUSE THEY SPEND >10% OF DRIVE TIME IGNORING THE ROAD

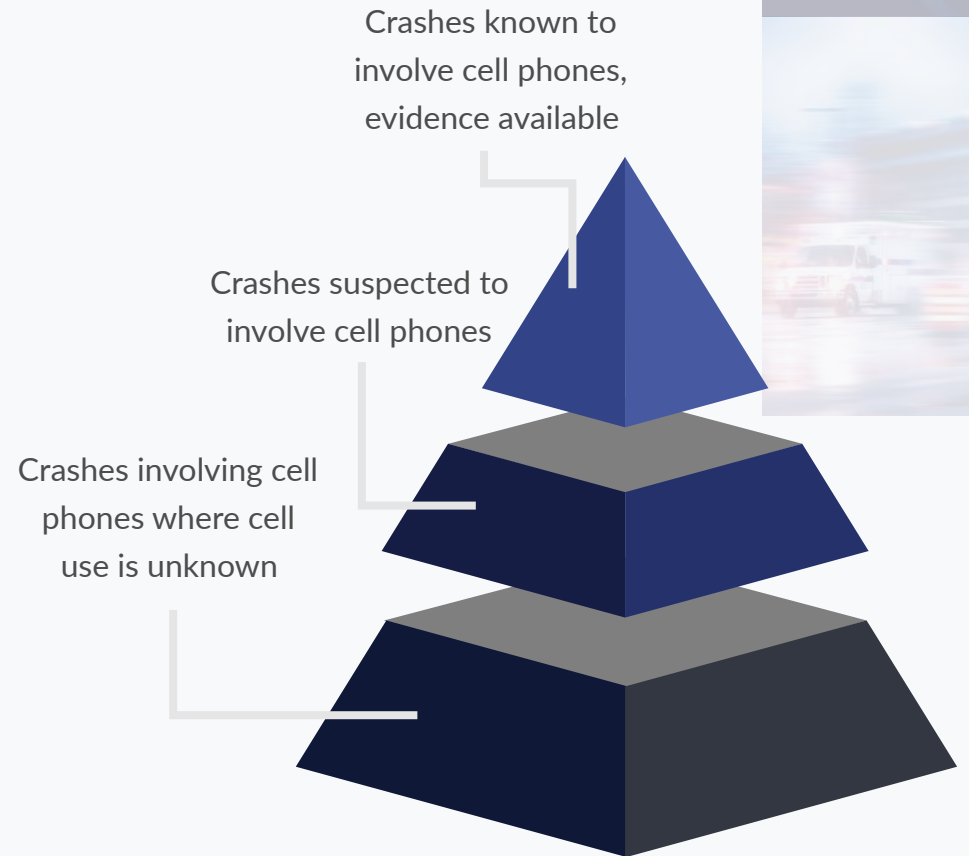


What we concluded from our survey data is that no one readily accepts they're capable of putting others at serious risk. All of us want to believe we're safe while on the road. *But how safe are we really?*

Our blatant overconfidence paired by a relentless addiction to stay connected is clear. But how does this stack up against drunk driving? Could driver phone use really be worse?

The first place people look are traffic fatality deaths. In 2016, the National Highway Traffic Safety Administration (NHTSA) reported 10,497 deaths as a result of drunk driving² and 3,450 for distracted driving.³ Although drunk drivers cause more deaths, what most people fail to take into account is that driver phone use fatalities are much more difficult to track.

Drivers failing to admit they were distracted prior to a crash and inconsistencies in police reports make it difficult to arrive at an accurate number. But there are other reasons to believe mobile phones are deadlier than NHTSA suggests. NHTSA reports that during daylight hours, approximately 660,000 drivers are using their cell phones while driving.⁴ As part of our 2018 Distracted Driving Study, Zendrive found that the problem was **100 times worse than reported** by the government's dataset. Over 69 million people use their phones at least once while behind the wheel, meaning at least 60 percent drivers use their phones while driving each day.



² <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812450>

³ <https://www.nhtsa.gov/risky-driving/distracted-driving>

⁴ http://www.nhtsa.gov/stati/files/nnumbers/SafetyNumbers_Nletter101_811762.pdf

We know distracted drivers' behavior is at least as dangerous as drunk drivers. But Phone Addicts outnumber drunk drivers, too. According to the AAA Foundation for Traffic Safety, the highest number of drunk drivers are on the road between midnight and 3 am, with fatal crashes four times higher at night than during the day.⁵ Our data shows Phone Addicts are on the road at every hour of the day, with peak hours during times most folks are on the road, between 7 am and 6 pm. **Which means that both in number and in timing, distracted drivers are a bigger danger than drunk drivers.**

We know that driver phone use is a big problem, but we barely have a handle on it. There are, however, scientific studies that prove smartphones cause cognitive, visual and manual distractions when drivers are behind the wheel. These findings, paired with the quantitative and qualitative results of our study make it clear that Phone Addicts are the greatest risk on public roads.

Case Study:

In a 2006 study conducted by the University of Utah⁶, cell phone drivers were found to be just as bad as drunks. However, when controlling for driving conditions and time on task, smartphone drivers exhibited greater impairment than intoxicated drivers.

The study revealed that the driving abilities of cell phone users are akin to drivers with the legal blood-alcohol limit of 0.08 percent. The researchers specifically found that cell phone users are:

- More likely to crash
- 9 percent slower to deploy the brakes
- 24 percent more variance in their following distance
- 19 percent slower to return to normal speed after braking
- Drive more slowly than drunk drivers

⁵ <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/811523>

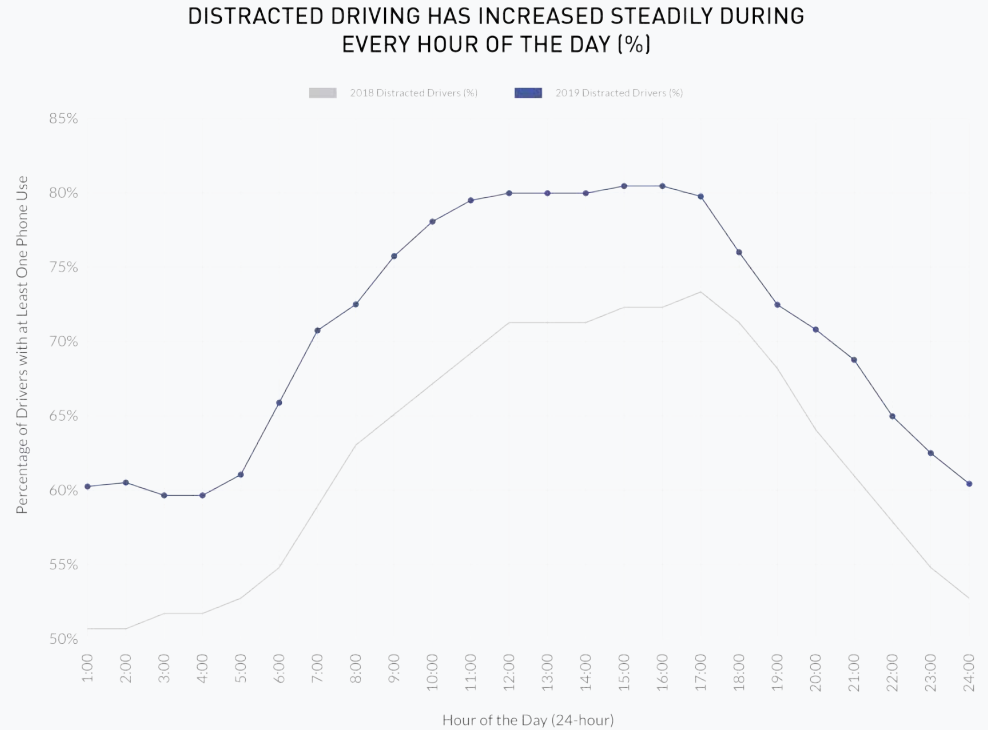
⁶ https://archive.untah.edu/news_releases/06drivers-on-cell-phones-are-as-bad-as-drunks/

Findings

Overall, we found that distracted driving went up in every state year over year. In each of the 19 major cities we studied, driver phone use per hour increased by 5 to 10 percent across the board.

Across the 1.8 million people we studied, we found that the general population averaged 1 minute, 48 seconds of phone use per hour of driving. When you just look at Phone Addicts, Zendrive found that they use their phones for 6 minutes or more for every hour behind the wheel. **This is almost double last year's amount of distraction**, when we found habitual phone users spending an average of 3 minutes, 30 seconds on their phones each hour.

We found that drivers are slightly more likely to use their phone between noon and 4 pm compared to other times in the day, as shown in the graph.



Phone Addicts On the Rise

The most alarming trend from our 2019 study was identifying the Phone Addict driver category. Growing nationally at a shocking pace, **Phone Addicts nearly doubled in 2018** from 4.6 to 8 percent of the population. They engage in the following behaviors:

- Spend 1.5x more time on the road than average
- Drive 7.6x more miles while using their devices every day
- Pick up their devices 4.3x more than average
- Spend 6x more time with their devices each time they touch it

All of these behaviors lead Phone Addicts to spend almost a third of their driving time (28 percent) actively ignoring the road. This is an unparalleled level of distracted driving which is already presenting a serious threat to public safety.

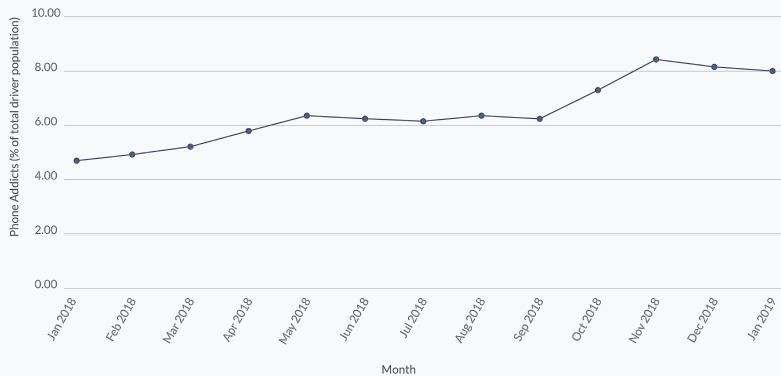
At this current growth rate, we could see up to 20 percent of the driving population classified as Phone Addicts by March 2022. This would mean that one in every five drivers would classify as a Phone Addict on our roads in just under three years.

2 0 1 9

One in 12 drivers is a phone addict



PERCENTAGE OF PHONE ADDICTS BY MONTH
Increase in phone addict percentage over a year

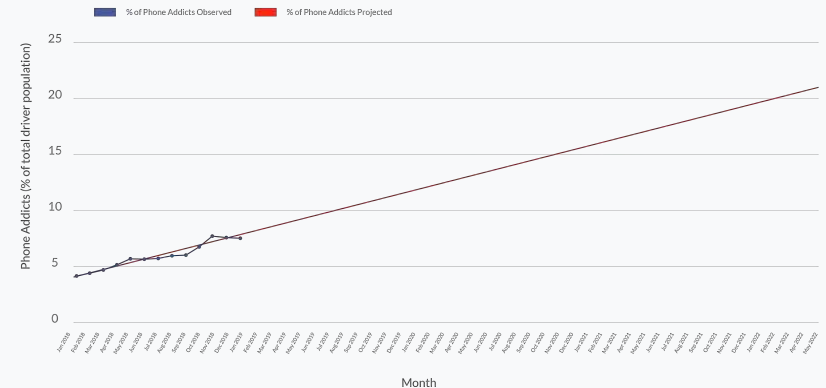


2 0 2 2

One in five drivers is a phone addict



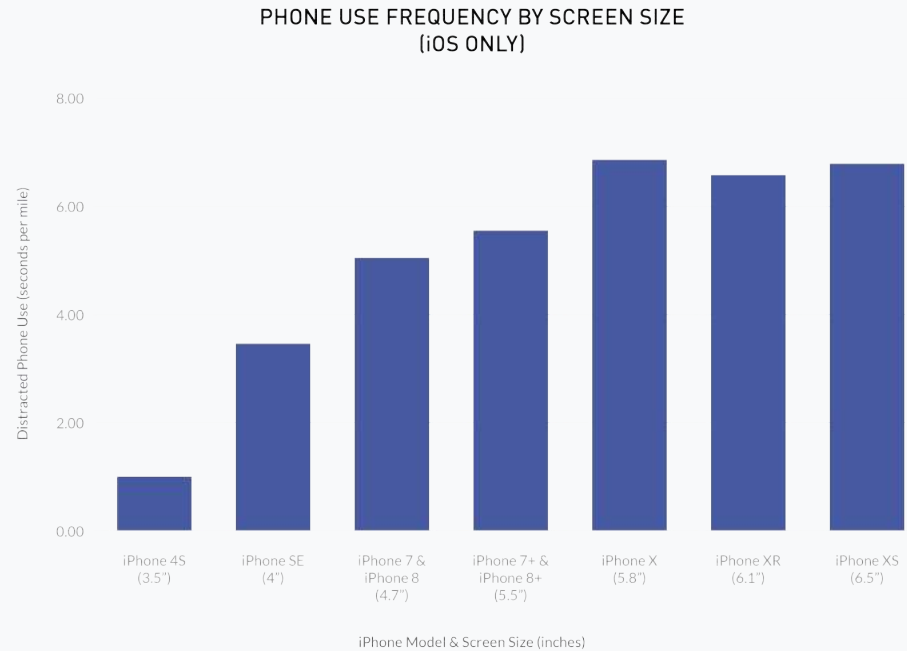
PERCENTAGE OF PHONE ADDICTS BY MONTH
Increase in phone addict percentage over a year



Bigger is not Better

A new data point in our research provided us with new insight in to why drivers are so hooked to their phones while on the road. Over the course of the past decade, mobile phones have become powerful machines, helping us accomplish multiple tasks at once. Upon thinking about the physical properties of smartphones and the ways in which their design has evolved over the years, we stumbled across an astonishing question. Could there be a positive correlation between larger screen sizes and driver phone use? The results were fascinating.

The data speaks for itself: **the larger the screen, the more distracted the driver.** As phone screens have gotten larger, drivers can't help but look at their screen while behind the wheel. As iOS screen sizes grow larger, distracted driving rates rise dangerously in parallel. While our data can't point to screen size as the driving cause of distraction, the correlation is worrying.



State Rankings

Do laws that prohibit drivers from using handheld phones work? Was there more distracted driving in your state this year?

Our new analysis found that distracted driving increased in every single state. Survey results show the increase in distracted driving across all states has been driven by music and phone applications. While 47 states (including the District of Columbia) ban text messaging, talking on a handheld phone while driving is only banned in 16 states nationwide. Although texting laws are a huge step forward, immediate and aggressive action needs to be taken against handheld phone use. We believe enforcing handheld bans can make a positive impact on states across the board next year.

2019 STATE RANKINGS (MOST DISTRACTED TO LEAST DISTRACTED)

State	2019 - Average percent of time people spent using their phones while driving each day	2018 - Average percent of time people spent using their phones while driving each day (Considering trips with at least one phone use)	Change in rank-year-over-year	Hand-held phone ban (*current rank state only)	
51	Virginia	9.45%	6.05%	-27	Partial Ban
50	Montana	9.14%	6.99%	-19	
49	New Hampshire	9.00%	6.29%	-28	Yes
48	Georgia	8.69%	6.50%	-38	Yes
47	Mississippi	8.63%	5.77%	-40	
46	New Mexico	8.37%	5.47%	+1	
45	Michigan	8.37%	6.76%	-25	
44	Connecticut	8.34%	6.19%	-5	Yes
43	Hawaii	8.25%	6.01%	+2	Yes
42	Maryland	8.15%	5.93%	-2	Yes
41	Wyoming	8.10%	6.37%	-12	
40	Wisconsin	8.09%	6.03%	-7	Partial Ban
39	New Jersey	8.09%	6.30%	-34	Yes
38	Delaware	8.04%	6.34%	+4	Yes
37	Ohio	8.03%	6.54%	-5	
36	Washington	7.92%	7.14%	+5	Yes
35	District of Columbia	7.91%	6.34%	-1	Yes
34	Utah	7.89%	6.25%	+15	
33	Oklahoma	7.88%	5.85%	-5	Partial Ban
32	West Virginia	7.88%	6.53%	-9	Yes
31	Arizona	7.87%	5.49%	+5	
30	Kansas	7.82%	5.44%	-24	
29	Florida	7.81%	5.24%	-14	
28	Colorado	7.76%	6.58%	+9	
27	Missouri	7.75%	6.94%	-9	
26	Minnesota	7.75%	6.39%	-17	
25	Iowa	7.70%	6.50%	-21	
24	North Dakota	7.70%	7.70%	-22	
23	Idaho	7.70%	6.20%	+27	
22	Maine	7.68%	6.28%	+5	
21	Alabama	7.67%	7.97%	-18	Yes
20	Vermont	7.66%	6.91%	-19	Yes
19	Tennessee	7.62%	5.71%	-5	Partial Ban
18	Rhode Island	7.60%	6.92%	+25	Yes
17	North Carolina	7.52%	6.49%	+8	
16	Massachusetts	7.50%	6.03%	+10	
15	Indiana	7.46%	5.95%	+20	
14	California	7.44%	6.27%	+37	Yes
13	Nebraska	7.40%	6.58%	-5	
12	Arkansas	7.35%	5.24%	+5	Partial Ban
11	Illinois	7.32%	6.39%	+11	Yes
10	Texas	7.23%	6.25%	+28	Partial Ban
9	Kentucky	7.13%	6.71%	+21	
8	Nevada	7.12%	6.54%	+40	Yes
7	Louisiana	7.11%	6.06%	+9	Partial Ban
6	Alaska	7.03%	5.73%	+38	
5	South Dakota	7.03%	6.30%	+14	
4	South Carolina	6.89%	7.04%	+9	
3	Oregon	6.83%	7.74%	+43	Yes
2	New York	6.74%	6.09%	+10	Yes
1	Pennsylvania	6.47%	6.58%	+10	

City Rankings

At the city level, do prohibitions on driver handheld phone use work? Zendrive looked at the amount of time drivers spent on their phones during each trip. Like states, driver phone use increased this year in the nineteen cities and metropolitan areas that Zendrive looked at in the study. Although two thirds of the states on this list have handheld phone bans, the regulations in place aren't doing enough to slow down distractions.

2019 CITY RANKINGS (MOST DISTRACTED TO LEAST DISTRACTED)

	City	2019 - Average percent of time people spent using their phones while driving	2018 - Average percent of time people spent using their phones while driving per trip	Change in rank year-over-year	City/State has hand-held phone ban
19	Houston, TX	9.44%	7.84%	+3	Partial Ban
18	Dallas--Fort Worth--Arlington, TX	9.23%	N/A *	N/A *	Partial Ban
17	Detroit, MI	8.85%	7.02%	+3	
16	Denver--Aurora, CO	8.43%	6.70%	-2	
15	San Diego, CA	8.37%	N/A *	N/A *	Yes
14	Miami, FL	8.32%	7.08%	+7	
13	Boston, MA--NH--RI	8.22%	6.89%	+3	
12	San Jose, CA	8.19%	7.00%	+7	Yes
11	Philadelphia, PA--NJ--DE--MD	8.12%	6.69%	+2	
10	Austin, TX	7.97%	6.69%	+2	Partial Ban
9	Los Angeles--Long Beach--Anaheim, CA	7.86%	6.91%	+8	Yes
8	San Francisco--Oakland, CA	7.82%	6.58%	+7	Yes
7	Washington, DC--VA--MD	7.80%	6.51%	+1	Yes
6	Chicago, IL--IN	7.79%	6.47%	No Change	Yes
5	Pittsburgh, PA	7.60%	6.15%	No Change	
4	Atlanta, GA	7.31%	6.64%	+6	Yes
3	New York--Newark, NY--NJ--CT	7.28%	6.06%	+1	Yes
2	Portland, OR--WA	7.25%	5.95%	+1	Yes
1	Seattle, WA	7.13%	5.70%	No Change	Yes

* No 2018 data available

Conclusion

We are at a crucial moment in the fight against driver phone use.

Although 2018 came with its share of challenges, the future of mobility looks bright. The upcoming decade is set to usher in a wave of new technologies focused on reducing thousands of traffic fatalities on our roads. With the roll out of 5G, vehicles and city infrastructure will begin to communicate, working together to alert drivers and pedestrians of potential crashes through predictive analytics. Smartphones will also become a part of this fourth industrial revolution, becoming faster and bigger than ever before. But will our addictions grow over the next decade, too?

From local Vision Zero policies to the national Road to Zero coalition, communities have set time-bound goals to eliminate traffic deaths and serious injuries. Thirty-five mayors across the country, including Austin, Denver, Durham, Los Angeles, New York, Seattle, and Washington, D.C., have committed to years by which their cities will have no one killed in traffic.⁷ Since we don't even realize how often we're distracted, Zendrive encourages everyone to pledge to turn on their driving autoresponder. On iOS it's Do Not Disturb While Driving mode, and on Android it can be turned on through Android Auto. Now when you're driving and get a text, your phone will automatically text back that you're driving and will text back later, keeping you safe and distraction-free while your friend doesn't feel ignored.

The findings from this study point to new strategies that could make a measurable difference in reducing driver phone use and related crashes, injuries, and deaths:

- The distracted driving epidemic, aka 'this generation's drunk driving', is increasing along with the rates of collisions and pedestrian deaths.
- This coincides with the rise of "Phone Addicts" - a new class of drivers so obsessed with their phones, they don't notice or care that they're driving distracted.
- Although though texting isn't the worst offender on the list of apps we use while driving, it's still the easiest thing to set up as a non-distraction with the tools already built into phones.

Since 1982, drunk driving fatalities have decreased by 48 percent. This progress, although significant, has taken over a century to accomplish. With all of the data and information available to us today, does it need to take an entire generation to eradicate distracted driving?

Together, we have the chance to make history and create safer roads for all. Zendrive is starting #TextYouLater, a Twitter pledge to set your autoresponder and to tag others to do the same. **We invite you to take the #TextYouLater pledge on Twitter and partner with us to create safer roads for all.**

⁷ <https://visionzeronetwerk.org/about/vision-zero-network/elevating-efforts-in-vision-zero-cities-across-the-us/>

About Zendrive

Zendrive is a mission-driven company, working to improve road safety with data and analytics. Our smartphone-based system measures and analyzes driver behavior. Zendrive focuses on the behaviors most likely to contribute to collisions: speeding, driver phone use, aggressive acceleration, and hard braking. We have the largest and fastest growing dataset of driving and driver behavior, having measured and analyzed 160-billion miles of data in the past two years.

Further Research

More research to compare Zendrive's driver phone use data to traffic collision, injury, and fatality data would help develop and prioritize interventions to stop people from using their phones behind the wheel. By mapping these data points and analyzing their time and date stamps, researchers could better understand where and when driver phone use contributes to crashes and casualties. This would help law enforcement and other public officials implement public awareness and enforcement campaigns to target the most common and dangerous types of driver phone use. It could also help traffic engineers design streets to discourage driver phone use.

Driver phone use at night lasts longer, and it would shed more light on this risky behavior by investigating if these longer nighttime instances of phone use are more likely to result in collisions and if those collisions are more frequent and/or severe than daytime phone use-related crashes.



Methodology

Data Overview

Total Zendrive driver behavior data set: 160 billion miles

Total number of Zendrive users: 60 million drivers

Time period for study: November 2018, December 2018, January 2019 (92 days)

Driver behavior data set for study: 4.5 billion miles

Total number of users in study: 1.8 million drivers

Drawing from Zendrive's 160 billion miles of anonymized driver behavior data, we looked at the frequency and duration of phone use behind the wheel.

The average trip in the study was 10.6 miles and lasted for 18 minutes. This is consistent with research by the AAA Foundation for Traffic Safety, which found that, on average, Americans make two driving trips per day, covering 29 miles and 46 minutes.

The millions of people who use Zendrive are a mix of commercial customers and individual consumers. They all operate standard passenger vehicles -- e.g. sedans, station wagons, minivans, SUVs, etc., not tractor trailers or other large industrial vehicles. Zendrive technology detects vehicle trips and safety related driving events using smartphone sensors. The safety events that Zendrive focuses on include speeding, aggressive acceleration, hard braking, collisions and phone use.

Phone use while driving is detected when the driver handles the phone for a certain period of time for various purposes such as talking, texting, or navigating. For privacy purposes, reported numbers do not differentiate between different purposes or apps; when the car is in motion the data considers all touching or moving of the smartphone as a driving distraction. The dataset used for this study consists of individual drivers driving passenger cars. The dataset does not include any type of heavy vehicle. Road network characteristics and traffic conditions were not included in the analysis. Zendrive's algorithms are able to differentiate between drivers and passengers. Our system discards phone use (and other risky behavior data) collected from passengers' phones.

U.S. STATE RANKING METHODOLOGY

- All 50 states and the District of Columbia were ranked by how many drivers spent the highest proportion of their daily driving trips using their phones
- Zendrive calculated the phone use ratio for states by dividing the average of users' daily aggregated phone use by the average of users' daily aggregated trip duration -- i.e. the average amount of time drivers use their phones everyday divided by the average time they drive everyday

U.S. CITY RANKING METHODOLOGY

- Zendrive selected a sample set of cities to analyze from the best and the worst states
- Zendrive calculated the phone use ratio for cities by dividing the average time per trip that users use their phones (in minutes) by the average duration of each trip (in minutes) -- i.e. the average amount of time drivers use their phones on each trip divided by the average time of each trip