

Pre and Post Observational Surveys of Driver Electronic Device Use in Illinois

Background

Visible electronic device use such as cell phone, email, and texting are considered major distracted driving behavior that poses a danger to vehicle occupants as well as non-occupants such as pedestrians and bicyclists. Several studies by NHTSA (<http://www.nhtsa.gov/Research/Crash+Avoidance/Distracted>) have indicated that distraction occurs when drivers divert their attention from the driving task to concentrate on using cell phone, email and texting. Smartphones have made it easy for people to stay connected at all times. But that can pose serious safety risks if someone checks his or her text messages, emails, phone calls while driving. During the last few years, almost all states including the state of Illinois have passed laws limiting drivers' cell phone use and texting while driving. The last Illinois cell phone legislation was signed by Governor Pat Quinn on August 16, 2013 into law that banned the use of hand-held devices for all drivers behind the wheel. Motorists could still talk and drive if they use hands-free technology to conduct their conversations. Otherwise they need to pull off the road to make a call or face fines starting at \$75. The law took effect on January 1, 2014.

Pre and Post Electronic Device Surveys

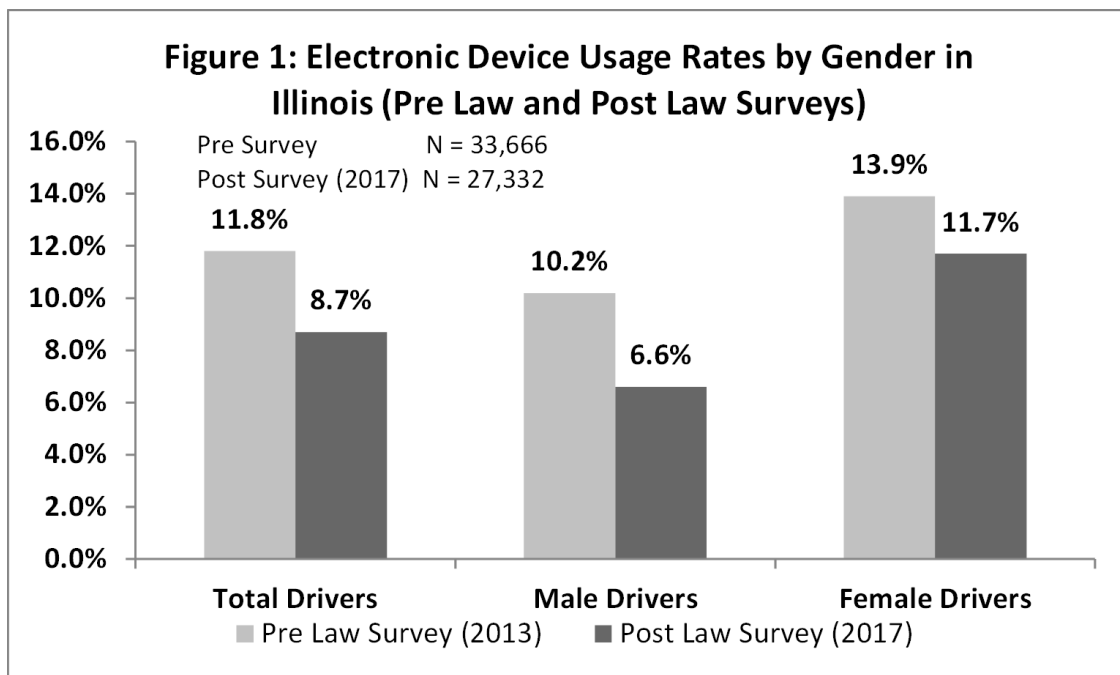
In order to determine whether the ban on cell phone and texting had any impact on the visible hand-held device usage rate, we conducted a pre and post statewide observational surveys of drivers, using multi-stage random sample of observational sites where we usually conduct safety belts surveys. The pre survey was conducted in November 2013 before the cell phone law and the most recent post survey was conducted in April 2017. A total of **51** sites were selected randomly from the 288 original statewide safety belt survey sites to conduct driver electronic device use surveys. For more information on the survey sample of the annual safety belt survey, refer to our website at: <http://www.idot.illinois.gov/transportation-system/safety/evaluations>. In order to observe the driver electronic device, a few adjustments were made to the original statewide safety belt survey specifications.

1. The survey sites were altered to closest intersections controlled by stop signs or stoplights or ramps in order for surveyors to observe the drivers' visible electronic device use.
2. The survey was conducted between 7:00 a.m. and 6:30 p.m. when the light was adequate for observation.

3. Only stopped vehicles are observed to permit time to collect driver electronic device use status by gender.
4. Only the use of a visible hand-held cell phone or texting device was observed when vehicles passed an observation point.
5. The survey sites included interstate highways, freeways, county roads, state highways and a random sample of residential streets within selected areas.

Results of Pre and Post Law Surveys

Tables 1, 2, and 3 provide total observations, percent driver visible electronic device use, and percent changes before and after the hand-held cell phone and texting ban took effect in Illinois. **Table 1** shows data for all drivers and **Tables 2 and 3** provide the data for male drivers and female drivers respectively. A total of 33,666 drivers during the pre survey in 2013 and 27,332 drivers during the post survey in 2017 were observed. The electronic device usage rate among all drivers during the post survey was significantly lower than the usage rate during the pre survey (8.7% versus 11.8%). Female drivers as compared to male drivers tend to have higher usage rates during both pre and post surveys (13.9 versus 10.2 during the pre survey and 11.7 versus 6.6 during the post survey). The percent reduction of electronic use for male drivers was greater than for female drivers (see **Figure 1**).



As shown in **Table 1**, the city of Chicago had the highest usage rate during the pre-survey at 17.6%, while the downstate counties had the lowest usage rate during the post survey at 10.3%. The city of Chicago had the highest usage rate at 10.0% during the pre survey, while the upstate counties had the lowest usage rate during the post survey at 6.6%. The usage rate patterns by four selected regions among males and females are similar to the overall usage rate patterns.

Comparing the pre and post survey results, the drivers' visible hand-held device usage rate went down by 3.1 percentage points from 11.8% before the law to 8.7% after the law took effect in 2017. The percent reduction varied across four selected regions. The differences between pre and post observed visible electronic device usage rates in Illinois were much greater in the city of Chicago than the other counties. It is likely that drivers in the city of Chicago where there is a high volume of traffic and congestion tend to use cell phone, emailing, and texting more often than the drivers in upstate and downstate counties.

The drivers in the city of Chicago and upstate counties had highest percent reduction of 7.6% and 6.0% respectively. Cook County had a reduction of 2.6%. On the other hand, the downstate counties had a percent increase in visible handheld device use while driving by 0.9%.

According to **Tables 2 and 3**, the percent reduction of visible use of electronic devices among male drivers was greater than that of among female drivers (3.6% for male drivers versus 2.2% for female drivers). In addition, female drivers had significantly higher percent reduction across the city of Chicago and the upstate counties than male drivers, while males had a slightly higher reduction in Cook County. On the other hand, while male use of electronic devices decreased in the downstate counties by 3.1%, female use of electronic devices increased by 6.6%.

Overall, the results of pre and post surveys indicate that the cell phone and texting law and limited media and enforcement activities appeared to have impact on visible cell phone use and texting.

Table 1: Electronic Device Use Before and After Driver Ban on Hand Held Free Cell Phone and Texting (<u>Total Drivers</u>)					
Selected Regions	Pre Law (2013)		Post Law (2017)		% Change 2017 versus 2013
	Total Drivers Observed	Electronic Device Use (2013)	Total Drivers Observed	Electronic Device Use (2017)	
Total	33,666	11.8%	27,332	8.7%	-3.1%
Chicago	2,545	17.6%	3,392	10.0%	-7.6%
Cook	5,613	12.1%	6,315	9.5%	-2.6%
Upstate ¹	13,947	12.6%	11,304	6.6%	-6.0%
Downstate ²	11,561	9.4%	6,321	10.3%	+0.9%

Table 2: Electronic Device Use Before and After Driver Ban on Hand Held Free Cell Phone and Texting (<u>Male Drivers</u>)					
Selected Regions	Pre Law 2013		Post Law 2017		% Change 2017 versus 2013
	Total Drivers Observed	Electronic Device Use (2013)	Total Drivers Observed	Electronic Device Use (2017)	
Total	18,980	10.2%	16,202	6.6%	-3.6%
Chicago	1,475	15.3%	2,038	9.0%	-6.3%
Cook	3,357	10.1%	3,808	7.1%	-3.0%
Upstate ¹	7,815	10.8%	6,676	6.4%	-4.4%
Downstate ²	6,333	8.3%	3,680	5.2%	-3.1%

Table 3: Electronic Device Use Before and After Driver Ban on Hand Held Free Cell Phone and Texting (<u>Female Drivers</u>)					
Selected Regions	Pre Law 2013		Post Law 2017		% Change 2017 versus 2013
	Total Drivers Observed	Electronic Device Use (2013)	Total Drivers Observed	Electronic Device Use (2017)	
Total	14,686	13.9%	11,130	11.7%	-2.2%
Chicago	1,070	20.8%	1,354	11.4%	-9.4%
Cook	2,256	15.1%	2,507	13.1%	-2.0%
Upstate ¹	6,132	14.8%	4,628	7.8%	-7.0%
Downstate ²	5,228	10.8%	2,641	17.4%	+6.6%

1. Upstate region includes the following counties: DuPage, Kane, Lake, McHenry and Winnebago

2. Downstate Region includes the following counties: Champaign, Bureau, Effingham, Rock Island, Madison and St. Clair

Based on the annual telephone survey that was conducted in September of 2016, the following table provides frequency distributions of select cell phone-related questions.

Percent Distribution of Cell Phone and Texting Related Questions Based on Annual Telephone Survey (N=500)	
List of Questions	Percent
Do you use a cell phone or other mobile device while driving?	
yes	32.3%
no	67.6%
dk/ref	0.1%
What type of cell phone/mobile device do you currently use while driving?	
hands-free cell phone	83.6%
hand-held cell phone	16.1%
dk/ref	0.4%
On an average trip, how often do you use a hand-held cell phone/or other mobile device to make calls while driving?	
Always	2.3%
Sometimes	17.0%
Seldom	19.3%
Never	61.3%
dk/na	0.0%
On an average trip, how often do you use a hand-held cell phone/ or other mobile device to text while driving?	
Always	8.8%
Sometimes	7.3%
Seldom	15.0%
Never	77.0%
dk/na	0.0%
Currently, Illinois has a law requiring all drivers not to text when they drive. In your opinion, should police be allowed to stop a vehicle for just texting while driving, when no other traffic laws are broken?	
Should be allowed	91.3%
Should not be allowed	6.8%
dk/na	1.9%
As of January 1, 2014, using a hand-held cell phone/ mobile device while driving is a primary offense in Illinois. This means that police can use that as the sole reason for stopping a driver. Do you favor or oppose allowing police to stop and ticket motorists for just using a hand held cell phone/mobile device while they drive?	
Favor	83.0%
Oppose	11.0%
dk/na	6.0%