

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 post survey was conducted in April 2015 up to 16 months after the law took effect. 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.

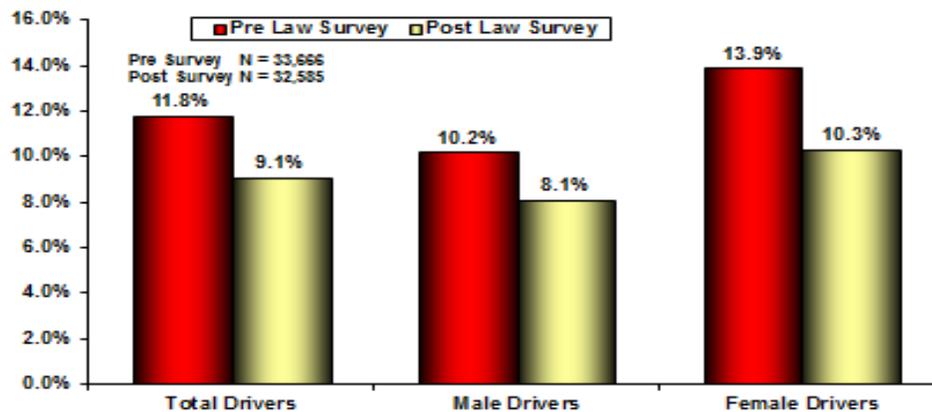
1. The survey sites were altered to closest intersections controlled by stop signs or stoplights or ramps in order for surveyors to observe the drivers' visible electronic device use.

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 32,585 drivers during the post survey in 2015 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 (9.1% 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 10.3 versus 8.1 during the post survey). The percent reduction of electronic use for female drivers was greater than for male drivers (see Figure 1).

Figure 1: Electronic Device Usage Rates by Gender in Illinois (Pre Law and Post Law Surveys)



As shown in **Table 1**, the city of Chicago had the highest usage rates (17.6% during the pre survey in 2013 and 12.9% during the post survey in 2015). The downstate counties had the lowest usage rate at 9.4% during the pre survey and the upstate counties had the lowest usage rate at 8.5% during the post survey. 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 2.7 percentage points from 11.8% before the law to 9.1% after the law took effect. 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 Cook County including the city of Chicago than the other counties. It is likely that drivers in Cook County and 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 over 4.7%. The downstate counties had a lowest percent reduction in visible handheld device use while driving at 0.9%.

According to **Tables 2** and **3**, the percent reduction of visible use of electronic devices among female drivers was greater than that of among male drivers (3.6% for female drivers versus 2.1% for male drivers). In addition, female drivers had significantly higher percent reduction across four selected regions than male drivers, except in the downstate counties where the percent reduction of male drivers were slightly higher than female drivers (1.2% for males versus 0.9% for females) that tend to be statistically insignificant.

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 (Total Drivers)					
Selected Regions	Pre Law (2013)		Post Law (2015)		% Change 2015 versus 2013
	Total Drivers Observed	Electronic Device Use (2013)	Total Drivers Observed	Electronic Device Use (2015)	
Total	33,666	11.8%	32,585	9.1%	-2.7%
Chicago	2,545	17.6%	3,475	12.9%	-4.7%
Cook	5,613	12.1%	6,937	10.3%	-1.8%
Upstate ¹	13,947	12.6%	12,012	7.8%	-4.8%
Downstate ²	11561	9.4%	10161	8.5%	-0.9%

Table 2: Electronic Device Use Before and After Driver Ban on Hand Held Free Cell Phone and Texting (Male Drivers)					
Selected Regions	Pre Law 2013		Post Law 2015		% Change 2015 versus 2013
	Total Drivers Observed	Electronic Device Use (2013)	Total Drivers Observed	Electronic Device Use (2015)	
Total	18,980	10.20%	17,552	8.1%	-2.1%
Chicago	1,475	15.30%	1,992	10.9%	-4.4%
Cook	3,357	10.10%	3,759	9.9%	-0.2%
Upstate ¹	7,815	10.80%	6,485	6.9%	-3.9%
Downstate ²	6,333	8.30%	5,316	7.1%	-1.2%

Table 3: Electronic Device Use Before and After Driver Ban on Hand Held Free Cell Phone and Texting (Female Drivers)					
Selected Regions	Pre Law 2013		Post Law 2015		% Change 2015 versus 2013
	Total Drivers Observed	Electronic Device Use (2013)	Total Drivers Observed	Electronic Device Use (2015)	
Total	14,686	13.90%	15,033	10.3%	-3.6%
Chicago	1,070	20.80%	1,483	15.6%	-5.2%
Cook	2,256	15.10%	3,178	10.8%	-4.3%
Upstate ¹	6,132	14.80%	5527	8.8%	-6.0%
Downstate ²	5,228	10.80%	4,845	9.9%	-0.9%

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 2014,

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	38.4%
no	61.6%
dk/ref	0.0%
What type of cell phone/mobile device do you currently use while driving?	
hands-free cell phone	80.8%
hand-held cell phone	19.2%
dk/ref	0.0%
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	0.1%
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	90.5%
Should not be allowed	7.4%
dk/na	2.1%
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	83.6%
Oppose	13.5%
dk/na	3.0%