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Four High-Visibility Enforcement Demonstration Waves in Connecticut and New York Reduce Hand-Held Phone Use

By Linda Cosgrove, Neil Chaudhary, and Ian Reagan

“Good laws coupled with tough enforcement can reduce deadly distracted driving behavior.”

—Transportation Secretary **Ray LaHood**

The National Highway Traffic Safety Administration initiated distracted driving demonstration programs in two communities to test whether a high-visibility enforcement (HVE) model could reduce two specific instances of distracted driving—talking or texting using a hand-held cell phone. The HVE model combines dedicated law enforcement during a specified period,

paid and earned media that emphasizes an enforcement-based message, and evaluation before and after. NHTSA’s best known and most successful HVE campaign is the *Click It or Ticket* seat belt enforcement mobilization. HVE has also been effective in combating aggressive driving, impaired driving, and speeding. The demonstration projects were aimed to test whether HVE would be effective in modifying driver behavior to not use hand-held phones to talk or text, whether law enforcement would be able to observe violations, and whether an HVE campaign would increase drivers’ perceived risk of receiving a citation for violating the law.

This report summarizes results from four HVE waves over the course of one year targeting distracted driving in Hartford, Connecticut, and Syracuse, New York. An

interim report addressing the first two waves is available (Cosgrove et al., 2010).

Background

In 2009, NHTSA estimated that 5% of drivers nationwide were using a hand-held cell phone while driving at any given daylight time, down from 6% in 2008 (Pickrell & Ye, 2010). The estimated total number of drivers using hand-held cell phones was 672,000 (5% of 134 million drivers on the road) at a typical daylight moment in the United States in 2009.

Driving while distracted increases the likelihood of a crash (NHTSA, 2010) and even experienced drivers who divert their gaze from the roadway for longer than 2 seconds increase their crash risk (Klauer et al., 2006). A meta-analysis (Horrey & Wickens, 2006) of 23 experiments that measured the effects of cell phone use on driving performance found that, across all studies, reaction times were consistently slower when using a cell phone than when not using a phone.

Drivers using hand-held cell phones while driving dropped 57% in Hartford (from 6.8% to 2.9%) and 32% in Syracuse (from 3.7% to 2.5%).

Drivers who were texting while driving declined 72% in Hartford (from 3.9% to 1.1%) and 32% in Syracuse (from 2.8% to 1.9%).

PHONE IN ONE HAND TICKET IN THE OTHER

DISTRACTED DRIVING
A deadly epidemic

The Definition:

- Distracted Driving is any non-driving activity a person engages in that takes attention away from the primary task of driving.
- Internal distractions occur inside the vehicle and can be in the form of using a cell phone, eating and drinking, talking to other passengers, watching a video, or changing the radio station.
- External distractions occur outside the vehicle and can include looking at other motorists, pedestrians, road conditions, or even the scenery.

Many State legislatures have introduced laws banning hand-held cell phone use and texting in the past few years. New York¹ and Connecticut² passed laws banning hand-held cell phone use while driving in 2001 and 2005, respectively. At the time of this report, 8 States and the District of Columbia have banned hand-held cell phone use for all drivers, and 32 States and the District have banned texting for all drivers (GHSA, 2011). Thirty States also ban any use of a cell phone (even with a hands-free device) for novice teen drivers.

Under the leadership of the U.S. Department of Transportation Secretary Ray LaHood, NHTSA awarded two \$200,000 cooperative agreements to Connecticut and New York to implement and evaluate demonstration programs that apply the high-visibility enforcement model to distracted driving at the community level. Each state contributed an additional \$100,000 to the federal funds. Syracuse and Hartford (a combination of three contiguous cities—East Hartford, Hartford, and West Hartford) conducted the demonstrations.

Program Description

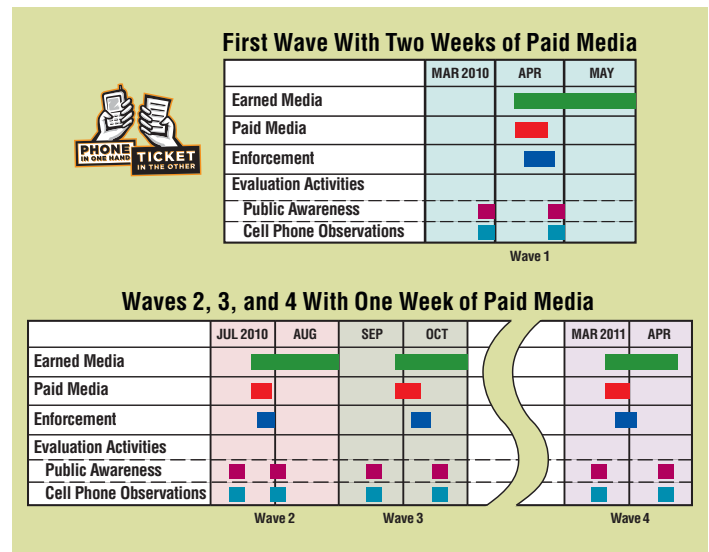
NHTSA worked with the Connecticut Department of Transportation and the New York Department of Motor Vehicles' (DMV) Governor's Traffic Safety Committee to conduct model high-visibility enforcement programs in communities in the two States. In Connecticut, the participating law enforcement agencies were the Connecticut State Police and the Hartford, West Hartford, and East Hartford Police Departments. In New York, the New York State Police, the Syracuse Police Department, and the Onondaga County Sheriff's

¹ New York's Hand-Held Law: Effective December 1, 2001. Use of a hand-held cellular telephone to engage in a call while driving is prohibited. Violators may be issued a ticket for a traffic infraction, resulting in a fine of up to \$100. Effective February 16, 2011, 2 driver penalty points will be assessed, in addition to the fine, for violations of the cell-phone law. Source: NY Vehicle and Traffic, Title 7, Article 33 §1225-c-d.

New York's Texting Law: Effective November 1, 2009. New York's hand-held law prohibits all drivers from using portable electronic devices to send text messages or e-mails while driving. The penalty for a violation of this law is a fine of up to \$150. It is a secondary law, which requires other probable cause to initiate a stop.

² Connecticut's Hand-Held/Texting Law: Effective October 1, 2010. Connecticut's new law imposed stronger penalties for motorists using a hand-held electronic device for talking or texting. For example, the original exemption for first-time offenders who provide proof of hand-held devices to the court is eliminated; and the fines for violations increase with each subsequent law violation. Texting is a primary, stand-alone, basis for a ticket. The first offense fine is \$100, \$150 for the second offense, and \$200 for third and subsequent offenses. Source: CT Public Act No. 10-109.

Figure 1
Demonstration Program and Evaluation Timeline in
Hartford, CT & Syracuse, NY



Office participated. There were four waves of enforcement over the course of one year.

Under separate contracts, NHTSA provided evaluation and communications support to both sites. Preusser Research Group was the evaluation firm and the Tombras Group was the communications firm.

The four waves of focused enforcement took place in April, July, and October 2010 and March-April 2011. The timeline shows the schedule for evaluation data collection, media flights, and enforcement in test and control sites before and after each of the four waves.

Development of the Creative Material

NHTSA's Office of Communications and Consumer Information developed and tested new TV, radio, and online creative materials. *Phone in One Hand, Ticket in the Other* became NHTSA's distracted driving high-visibility enforcement message. The creative material was designed to generate high awareness of stepped-up enforcement efforts about local cell phone laws and convince drivers to adhere to those laws. The creative materials are available at www.distraction.gov/campaign-tools/broadcast-materials.

Earned Media

Secretary LaHood, NHTSA Administrator David Strickland, and senior State and local officials launched the campaign with press events (U.S. DOT, 2010) in both New York and Connecticut on April 8, 2010. For New York, former Governor Paterson, Congressman Dan

Maffei, former DMV Commissioner David Swarts, and Syracuse Police Chief Frank Fowler led the Syracuse, New York event. For Connecticut, Lt Governor Michael Fedele, Governor's Highway Safety Representative Robbin Cabelus, former State senator Billy Ciotto for Congressman John Larson, Hartford Police Department Lt Robert Allan, and Dr. Brendan Campbell from the Connecticut Children's Medical Center led the Hartford event. Both events generated considerable coverage from local and national media outlets, including a feature on ABC-TV's *Good Morning America* (Clarke, 2010) and a feature on ABC News (San Miguel, 2010).

Each of the demonstration sites received sample earned media templates so that they could develop localized press releases, fact sheets, and post wave press releases. Outreach with the news media and various partners during each wave resulted in scores of articles and events in both States. In Connecticut and New York, more than 100 news organizations developed news stories about the demonstration projects. Syracuse and Hartford actively generated opportunities to earn additional media for the program. For instance, New York initiated a media tour and the Connecticut DMV joined with Travelers Insurance Company to sponsor a teen driving video contest. Hartford's WFSB Channel 3 sponsored the "I Promise" campaign and there were ride-alongs for local media. Coverage included television and newspaper stories in Connecticut and New York

communities and universities, and national coverage including *The Wall Street Journal*, *The New York Times*, *The Boston Globe*, *Consumer Reports*, MSNBC.com, ABC News *Good Morning America*, FOX News, CBS, and ABC's *20/20*.

To support social norming messages between the high-visibility enforcement periods, ESPN, NHTSA, and State Farm Insurance promoted the "Put It Down" campaign to generate awareness of the dangers caused by distracted driving.

Paid Media

NHTSA's Office of Communications and Consumer Information purchased air time to promote the program activity and emphasize the enforcement component among the target audience of men and women 18 to 45 years old. The television spots are available online at www.distraction.gov/hartford and www.distraction.gov/syracuse.

For the first wave of enforcement in April 2010, NHTSA purchased two weeks of advertising in each demonstration location at a level of about 535 gross rating points (GRPs) for television/cable, 400 GRPs for radio, and an additional 2 million online impressions on Web sites like USA Today.com. This was considered a strong buy that would reach the target audience enough times that the ad's message would resonate with them. Advertisers use GRPs to determine how much of their

Table 1
Media Buy

	Wave 1 (2 weeks)		Wave 2 (1 week)		Wave 3 (1 week)		Wave 4 (1 week)		Total
	Hartford	Syracuse	Hartford	Syracuse	Hartford	Syracuse	Hartford	Syracuse	
TV Cost	\$108,651	\$36,898	\$57,098	\$21,517	\$70,244	\$21,607	\$68,727	\$32,249	\$416,991
Radio Cost	\$27,204	\$12,338	\$17,586	\$9,431	\$14,628	\$5,198	\$15,954	\$8,282	\$110,621
Online Cost	\$4,624	\$4,425	\$3,750	\$3,750	\$2,500	\$2,500	\$5,000	\$5,000	\$31,549
Total Cost	\$140,479	\$53,661	\$78,434	\$34,698	\$87,372	\$29,305	\$89,681	\$45,531	\$559,161

Table 2
Enforcement Hours and Citations Issued

	Wave 1		Wave 2		Wave 3		Wave 4		Average per wave	
	Hartford	Syracuse	Hartford	Syracuse	Hartford	Syracuse	Hartford	Syracuse	Hartford	Syracuse
Dedicated Hours	1,345	1,370	1,345	1,337	1,045	1,345	1,272	1,307	1,252	1,340
Hand-Held Phone Use	2,229	2,185	2,327	1,977	2,257	2,341	2,621	2,354	2,359	2,214
Text/E-mail/ Distraction	24	115	21	169	64	183	115	263	56	183
Citations/ 10k Population	97	167	100	156	99	183	117	190	103	174

target audience is reached by a specific advertisement multiplied by the number of times the target audience sees it. For the next three enforcement waves in July and October 2010 and March-April 2011, NHTSA purchased one week of advertising in each demonstration location at a level of about 300 GRPs for television/cable, approximately 240 GRPs for radio, and an additional 1.5 million online impressions. The media expenditures were \$559,161 in both Hartford and Syracuse over the course of the year (See Table 1).

The Connecticut Highway Safety Office also ran the *Phone in One Hand, Ticket in the Other* slogan on 19 variable message boards in and around the Hartford area and purchased digital billboards on major Hartford interstate highways I-84 and I-91. The billboard message also ran at the XL Center, a sports and concert venue in downtown Hartford. This message ran on the XL Center digital billboard and outdoor marquee.



Enforcement

Hartford and Syracuse chose enforcement strategies tailored to their communities. Hartford preferred a spotter technique, where an officer, usually standing on the side of the road, radioed ahead to another officer whenever a passing motorist using a hand-held cell phone was observed. The second officer made the stop and wrote the ticket. Syracuse preferred roving patrols where officers actively sought out distracted drivers using cell phones or texting in their jurisdictions. Officers reported that higher vantage points, SUVs, and unmarked vehicles were particularly effective in assisting to identify violators. Both States found that having the flexibility to schedule overtime shifts as needed was critical to the successful implementation of the enforcement mobilizations. Both Highway Safety offices prepared citation holders that officers used to hold the tickets and provide specific information about the States' cell phone laws, the fine amount, and the risks associated with distraction.

Both Hartford and Syracuse dedicated officers to vigorously enforce the hand-held cell phone ban during the four waves, exceeding benchmarks based on previous

high-visibility enforcement campaigns. Table 2 shows the number of enforcement hours and phone and texting citations issued in each site, along with the rate of citations per 10,000 of each city's population.

Evaluation Methodology

Before and after each enforcement wave, NHTSA conducted observations of driver cell phone use and collected public awareness surveys at driver licensing offices in each test and comparison site. Albany, New York, served as the comparison area for Syracuse. Bridgeport and Stamford, Connecticut, were non-contiguous control areas to match the demographics of the three Hartford area cities. Control sites allow evaluators to separate the effect of the demonstration program from extraneous influences that may be going on in the State. No media was purchased in the control sites and law enforcement officers continued their usual enforcement activities without special emphasis on cell phone laws.

Cell Phone Observations

Cell phone use observations were taken at 15 sites in each intervention area, plus 15 sites in Albany, 15 in Stamford, and 7 sites in Bridgeport. Sites were selected from road segments based on traffic volume estimates. Three of the sites in each area were expressway or interstate off-ramps. The rest of the sites were identified from the highest volume segments, assuring that they were geographically dispersed throughout the areas. The main goal of site selection was to capture the bulk of the traffic streams in the given area.

Observation protocols were based on NHTSA's National Occupant Protection Use Survey (NOPUS) observation protocols, adapted to increase sample size. An earlier formulation of the method, consistent with NOPUS observation protocols, had observers sampling from traffic stopped at red lights. Therefore all selected sites were at traffic light controlled intersections. Pilot testing of this method resulted in few observations and NHTSA modified its method to observe moving traffic only. Observations were made from street corners observing one direction of traffic (the vehicles traveling in the lanes nearest the observer) for one hour at each site. When traffic signals turned red, observers pivoted and sampled vehicles from the moving traffic on the cross street. Observers coded vehicle type (passenger vehicle, SUV, pickup truck, van), sex, estimated age (16-24, 25-59, 60+) and whether the driver was holding a hand-held phone to her or his ear, manipulating a cell phone (other than by holding to one's ear), and if

the driver had a hands-free headset (e.g., Bluetooth) in the visible ear.

The main analyses were the average percentage of each of the three cell phone use categories calculated separately for each test and control area. Binary logistic regression analyses evaluated the significance of differences and chi squares were conducted for raw data for subsets of the data (e.g., age). Over 225,500 vehicles were observed for the four waves in test and control areas of the demonstration program.

Self-Reported Use and Awareness Surveys

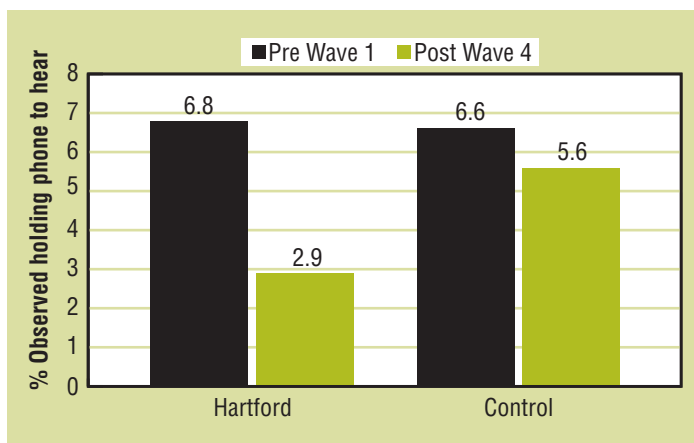
Motorists who visited driver licensing offices in the test and comparison sites completed a single-page questionnaire asking whether they had seen or heard of the distracted driving program, enforcement, or messaging. They were asked about their cell phone use while driving and whether they had changed their cell phone use in the past 30 days, among other topics. Surveyors collected more surveys for the first (pre-Wave 1) and the final (post-Wave 4) administration to increase the power of analyses for both baseline and final data. Over 20,624 self-report surveys were collected for the four waves of the demonstration program in test and comparison sites (9,480 in NY and 11,144 in CT).

Results

Observed Phone Use in Connecticut

The percentage of drivers observed holding their phones to their ears decreased from baseline to the end of the fourth wave in Hartford and the Connecticut control sites. The reduction was significantly greater in Hartford (from 6.8% to 2.9%) than the control site (from 6.6% to 5.6%). These changes represent a 57% drop in

Figure 2
Observed Hand-Held Phone Use in Connecticut



observed cell phone use for the Hartford site compared to a 15% drop at the control site.

Analysis of pre- to post- observations for each wave (e.g., pre-Wave 1 versus post-Wave 1, pre-Wave 2 versus post-Wave 2) indicated that the changes in the control areas were not significant. In contrast, analysis of each of these pre- to post-wave comparisons for Hartford indicated a significant reduction in observed hand-held cell phone use (see Figure 12 located on the final page of this Research Note).

Drivers estimated to be between the ages of 25 to 59 accounted for most of the decrease in observed hand-held cell phone use in the Hartford area. There were significant reductions in observed hand-held cell phone use for the two younger age groups; drivers whose estimated age was between 16 to 24 dropped 6.4 percentage points (from 9.0% to 2.6%) while those whose estimated age was 25 to 59 dropped 3.6 percentage points (from 6.8% to 3.2%). In the control sites, the changes in observed hand-held cell phone use were significant among the middle group (from 6.7% to 5.7%) but not significant for the youngest and oldest age categories (16 to 24 or 60 and above).

There were significant drops in observed hand-held phone use for both men and women in the Hartford area. Surprisingly, there was a significant ($p < .05$) decrease among female drivers but no change for male drivers in the control areas in observed hand-held phone use.

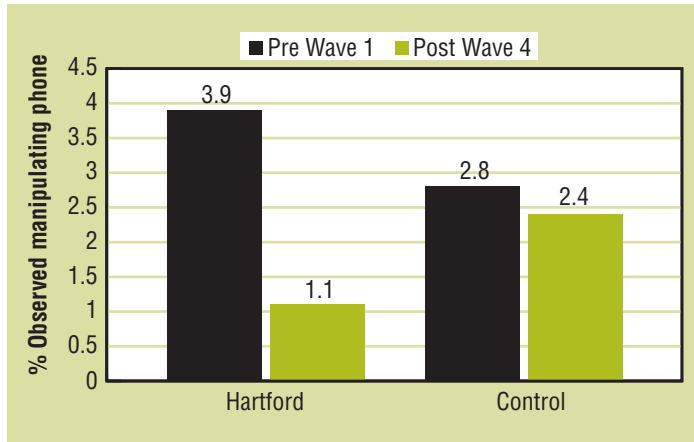
There were significant reductions in hand-held cell phone use for each vehicle type (passenger vehicle, SUV, pickup truck, or van) in the Hartford area. The largest reductions in observed hand-held cell phone use were for pickup trucks (from 9.9% to 4.0%) and SUVs (from 7.3% to 2.0%), while there were no significant changes in the control areas for pickup trucks, SUVs, or vans. However, there was a significant reduction in hand-held phone use in the control area for passenger cars.

The overall change in observed headset use was significant in both the Hartford and control areas. Observed headset use significantly decreased in the Hartford area (3.5% to 1.3%) and in the control area (4.1% to 2.0%). For Hartford, observed use of earpieces fell from the first wave through the second wave, increased through the third wave, and then dropped during observations made during the fourth and final wave (see Figure 14).

The percentage of drivers observed manipulating their phones (e.g., texting, dialing) followed a pattern simi-

lar to that of drivers talking on their hand-held phones. Figure 3 shows that overall there was a significant decrease in observed phone manipulation, from 3.9% to 1.1%. In contrast, there was no significant difference in observed cell phone manipulation in the control sites, from 2.8% to 2.4%. At the end of each individual wave, observers counted significantly fewer Hartford drivers manipulating their phones compared to the beginning of each wave (see Figure 13).

Figure 3
Observed Manipulation of Hand-Held Phones in Connecticut



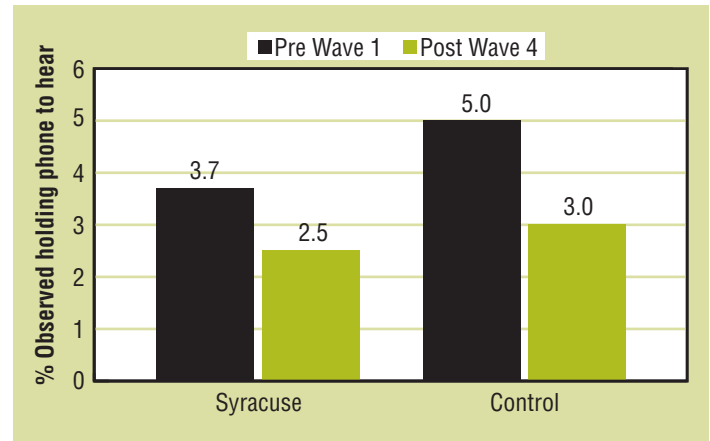
Observed Phone Use in New York

Fewer drivers in Syracuse were observed holding cell phones to their ears at the end of the fourth wave (from 3.7% to 2.5%) and this 32% decrease was statistically significant. In the control site, there was also a significant 40% reduction in observed hand-held cell phone use from 5.0% to 3.0% (see Figure 4). The interaction between location and demonstration wave was not significant, which suggests that the reductions in hand-held cell phone use were similar in both locations. Figure 15 presents the trends in observed hand-held phone use for Syracuse and the control site across all four waves.

In Syracuse, drivers estimated to be between the ages of 25 to 59 accounted for most of the decrease in hand-held cell phone use. None of the other age categories in Syracuse showed an overall decrease. In the control site, drivers whose estimated ages were 16 to 24 and 25 to 59 showed significant reductions in hand-held phone use. Drivers estimated to be 60 and older showed no significant changes in observed hand-held cell phone use in either location.

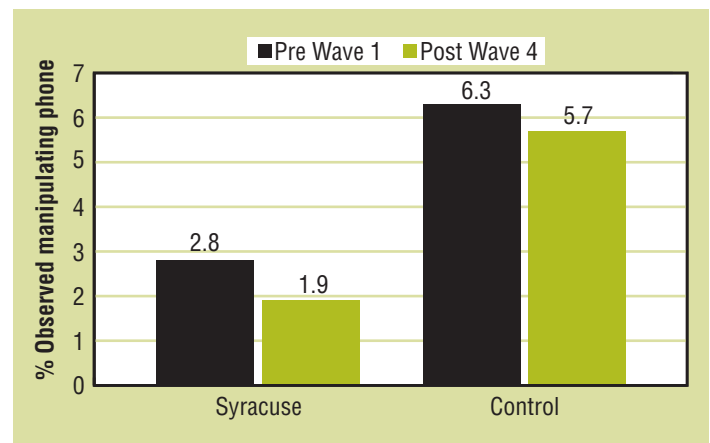
Overall, male drivers showed a significant decrease in using a hand-held phone while driving in Syracuse

Figure 4
Observed Hand-Held Phone Use in New York



while women did not. Observed hand-held cell phone use for male drivers dropped from 3.8% to 1.9%. In Albany, there were significant changes in the percentage of male and female drivers observed using their hand-held phones. Both sexes decreased their use of hand-held phones from the baseline to the end of the fourth wave observation.

Figure 5
Observed Manipulation of Hand-Held Phones in New York



In Syracuse, observations of electronic device manipulation (e.g., texting, dialing) significantly decreased ($p < .05$) from 2.8% to 1.9% by the end of the fourth wave. Albany's observed rate of manipulating a phone while driving was much higher than Syracuse at the baseline period. However, there was no significant difference in observed cell phone manipulation in Albany over the course of the program (see Figure 5). Across the four waves, there was more variability in observed cell phone manipulation in Albany than Syracuse (see Figure 16). Syracuse showed an overall decrease of 32% in observed phone manipulation from the baseline to the end of the fourth wave.

There were no significant changes in Syracuse in the percentage of drivers observed with a hands-free headset. Across the four waves the observed rate ranged from 1.2% to 2.3% in Syracuse and from 4.3% to 2.6% in Albany. There was a significant decrease from 4.3% to 2.9% in Albany by the end of the fourth wave (see Figure 17).

Self-Reported Cell Phone Use and Program Awareness in Connecticut

Respondents in Connecticut were aware of and knowledgeable about the program and enforcement. From the baseline to the end of the program, Hartford area drivers reported increased chances (perceived risk) of getting tickets while there was no effect in the control area. In both Hartford and the control sites, respondents also reported hearing more general distracted driving information and police enforcement of the cell phone and texting laws by the end of the fourth wave. The percentage of Hartford drivers who reported having ever gotten a cell phone ticket did not change significantly from the baseline (from 7% to 8%), but there was a statistically significant increase (from 9% to 12%) in the control areas.

At the end of the fourth wave the percentage of respondents in the Hartford area who heard about enhanced police enforcement was significantly greater than the baseline (from 31% to 71%). There was a smaller but significant increase of awareness of special police enforcement in the control areas as well (from 32% to 43%).

Awareness of the *Phone in One Hand, Ticket in the Other* slogan started at 5% in both Hartford and the Connecticut control sites. Over the course of the program, recognition increased significantly to 54% in Hartford. There was also a significant increase in the control area but not of the same magnitude (from 5% to 12%).

Recognition of other slogans was not as high. The other most recognized slogan in the Hartford area was *I-Promise Not to Drive Distracted* which was recognized by 15% of respondents. Local TV station WFSB ran messages with this slogan between enforcement waves. Recognition of Oprah Winfrey's *No Phone Zone* dropped from 7% to 5% in Hartford and from 6% to 5% in the control sites.

There were no significant differences in self-reported frequency of cell phone use while driving in Hartford (from 9% to 7%) or the control group (from 8% to 7%).

Similarly, there were no reliable differences in self-reported texting while driving in Hartford (from 4% to 3%) or the control sites (remained at 5%).

Self-Reported Cell Phone Use and Program Awareness in New York

Overall, Syracuse respondents knew about the enforcement and messaging campaign. Drivers in Syracuse reported having heard about cell phone enforcement with a significant increase from the baseline to the end of the fourth wave. Drivers in both Syracuse and Albany also reported hearing about distracted driving in general more by the end of the program.

Self-reported hand-held cell phone use decreased in Syracuse from 8% to 5% and this decline was statistically significant. Albany's rates increased from 6% to 9% and this change approached but did not reach statistical significance. Self-reported texting decreased in Syracuse from 6% to 3%, a statistically significant change. In Albany, self-reported texting remained at the same level of 3%.

Recognition of the main message, *Phone in One Hand, Ticket in the Other*, increased 24 percentage points in Syracuse (5% to 29%). The rates were flat in Albany, going from 4% to 5%.

Recognition of other slogans was considerably lower at the end of Wave 4 in Syracuse. For example 6% of the respondents recognized Oprah Winfrey's *No Phone Zone*.

Figures 6 through 11 show public awareness findings comparing pre-Wave 1 to post-Wave 4 for Syracuse, Hartford, and the control sites.

Law Enforcement Lessons Learned

All the law enforcement agencies had extensive experience conducting high-visibility enforcement campaigns and were enthusiastic about the challenge of applying the model to distracted driving. They held debriefings after each wave to discuss ways to improve the campaign. Some of the lessons learned over the course of the four waves include:

- Targeted enforcement using stationary patrols, spotters, and roving patrols can result in high levels of observed violations.
- Traditional *Click It or Ticket* stationary checkpoints or marked cruisers with uniformed officers were

Figure 6
In the Past Month, Have You Seen or Heard About Distracted Driving in [Connecticut/New York]?

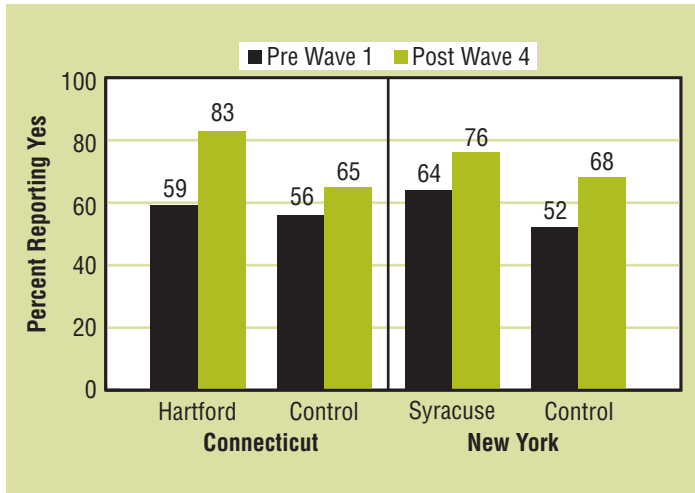


Figure 7
Awareness of “Phone in One Hand, Ticket in the Other” Slogan in Connecticut and New York

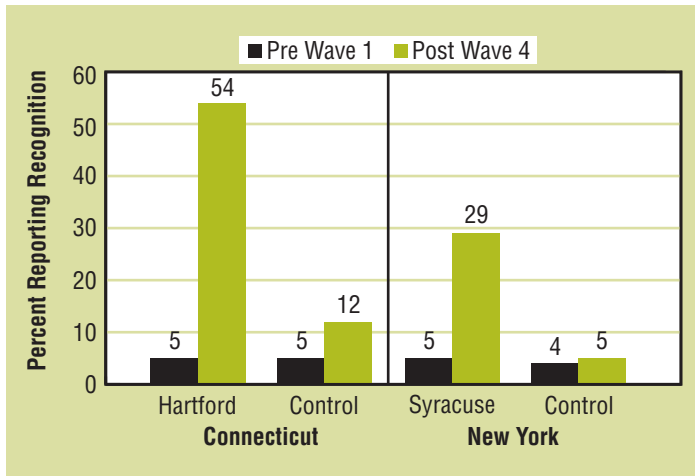


Figure 8
What Do You Think the Chances Are of Getting a Ticket If You Use a Hand-Held Cellular Phone While Driving?

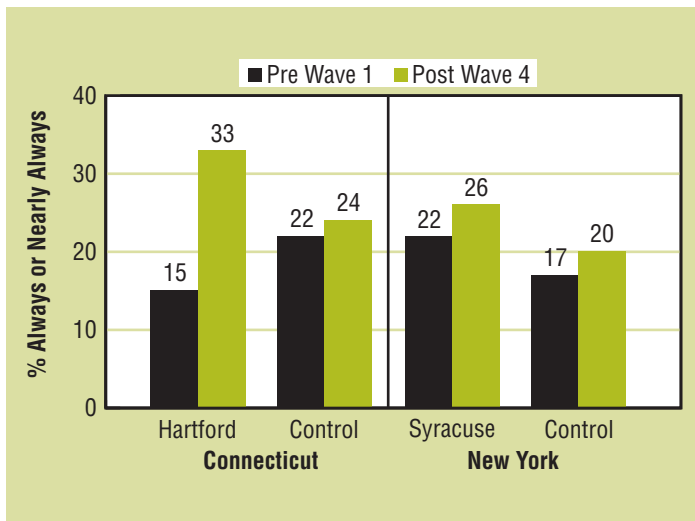


Figure 9
Strictness of Enforcement of Hand-Held Phone Law

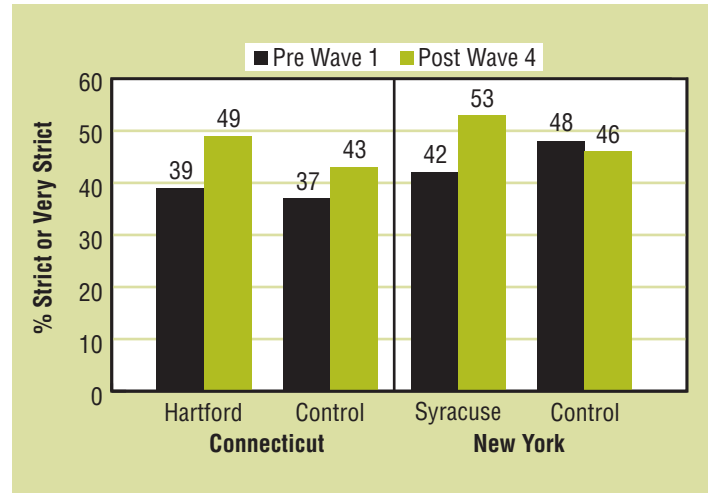


Figure 10
In the Past Month, Have You Seen or Heard About Police Enforcement Focused on Hand-Held Cellular Phone Use?

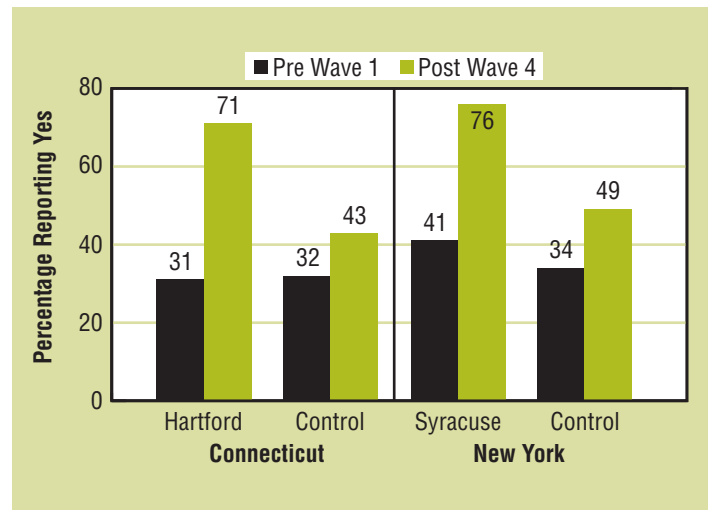
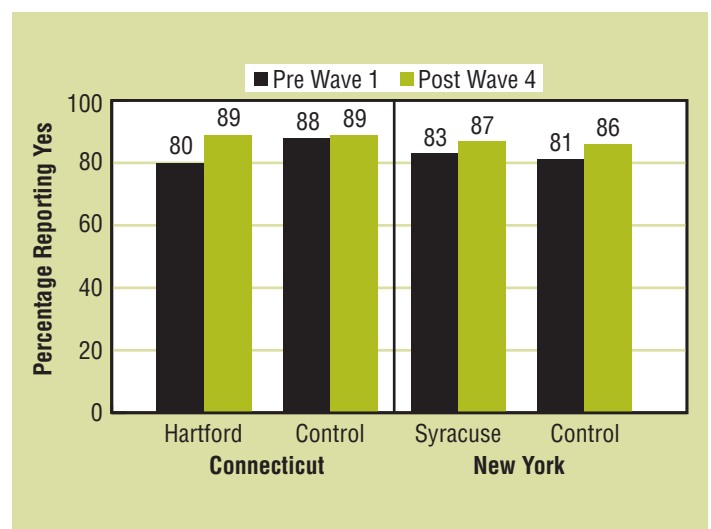


Figure 11
It Is Important for the Police to Enforce Hand-Held Phone and Texting Laws



less effective in Syracuse, while Hartford officers felt the spotter technique was more efficient and visible. Hartford patrols moved between locations to take advantage of traffic patterns and known high risk areas in their communities during the intense seven day morning and afternoon schedules. Syracuse roving patrols targeted high risk and high traffic volume areas in their communities.

- Texting offenders frequently commit other traffic violations, such as lane departure, traveling too slowly, or weaving on high-speed highways, providing additional cues to officers.
- Use of spotters on overpasses and elevated roadways, as well as use of taller SUVs and trucks, are effective in identifying drivers manipulating electronic devices given the elevated observation angle.
- Unmarked vehicles may be an advantage when using roving patrols.
- Roll call training videos for participating officers are beneficial to describe specific enforcement techniques and timelines, discuss coordination with neighboring law enforcement agencies, and describe media support for enforcement activities.
- Citation holders with information about the State's law are helpful for officers in educating motorists even when they contain a ticket.
- Extensive community outreach and public education between waves creates and reinforces social norms that using cell phones or texting while driving is unacceptable.
- Law enforcement officers were pleased with the level of media coverage throughout the campaign and became effective spokespersons as the scale and depth of the problem became more apparent.
- Public awareness of ticketing for cell phone and texting can be raised in a short period of time. Hartford motorists in later waves commented to officers that they "should have known better" given all the publicity surrounding the campaign.

Discussion

Public awareness of distracted driving is remarkably high, even before NHTSA's distracted driving demonstration programs began in Hartford and Syracuse. About 6 in 10 motorists in both communities had heard

something about distracted driving, before the new *Phone in One Hand, Ticket in the Other* advertisements aired and this rose to 8 in 10 at the end of the campaign.

High public awareness most likely reflects the influx in media discussing the issue. Insurance companies, mobile phone providers, safety organizations, and victim's activists' groups have been addressing the dangers of using a cell phone and texting while driving, especially for teens. Many sponsored advertisements on national television.

A number of state legislatures have passed texting and cell phone bans. The U.S. Department of Transportation held summits in Washington, DC, in September 2009 and October 2010 bringing together researchers, government agencies, industry representatives, public advocates, victim's organizations, and elected officials to discuss what could be done to reduce the preventable deaths and injuries that distracted driving is causing in America. The President issued an Executive order advising Federal workers to "put it down."

Oprah started the *No Phone Zone* and on April 30, 2010, the Oprah Winfrey Show launched a "No Phone Zone Day" with a live TV broadcast, rallies in five cities—Atlanta, Boston, Detroit, Chicago, Los Angeles, and Washington—and a national public service announcement campaign. ABC's *20/20* featured distracted driving enforcement in Syracuse and videotaped road tests in Virginia demonstrating how drivers do not recognize the degree to which texting and cell phone use degrades their driving performance on April 11, 2011.

The national attention has contributed to increases in overall awareness of distracted driving, which is a positive step in changing social norms about the unacceptability of using cell phones or texting while driving. It also played a role in the evaluation of the Hartford and Syracuse demonstration programs in that both control sites were also exposed to messages about distracted driving, cell phones, and texting. Ideally, the comparison sites should not be exposed to the program at all, but that did not occur with Hartford's and Syracuse's control sites as measured in public awareness and observation surveys. Law enforcement agencies in the comparison sites enforced their States' cell phone laws vigorously as well. One troop of the New York State Police wrote cell phone tickets (following press releases warning of enforcement) around Albany, the New York control site, and law enforcement in Connecticut's comparison sites engaged in work zone enforcement pro-

grams, also writing cell phone tickets whenever they observed violators.

An interesting finding is that the driver licensing office surveys show that motorists are willing to use their cell phones and text while driving while believing that it is important for the police to enforce hand-held phone and texting laws at the same time. Changing drivers' assessment of the risk associated with their own behavior presents a challenge. High-visibility enforcement campaigns are a proven countermeasure to change drivers' behavior quickly in a variety of traffic safety areas. The intent of a high-visibility enforcement campaign is not to issue tickets, but to take advantage of motorists' desire to avoid citations, escalating fines for repeat offenders (as in Connecticut), or points on their drivers' license (as in New York). The model seeks to deter drivers from engaging in a particular behavior in the first place and is most effective when there is a high certainty that motorists will receive a ticket when they violate the traffic law.

The new slogan, *Phone in One Hand, Ticket in the Other*, proved effective in conveying the message of increased cell phone enforcement to the public. Over 50% of respondents in Hartford and 30% in Syracuse reported that they had seen and heard the message by the end of the fourth wave of the program, significantly higher than in the control areas. Drivers reported having heard about the enforcement, recognized the increased strictness of the police, and thought that their chance of getting a ticket increased if they used a hand-held cell phone.

Self-reported use of a hand-held cell phone or texting while driving fluctuated between waves in all sites, ending lower in both test sites at the end of the fourth enforcement wave. It actually increased at the end of the first wave in Hartford and Syracuse, which seemed unusual since observations showed a decline in both sites. One explanation is that drivers were becoming more aware of their cell phone use while driving because of the increased media at that time. There was strong public support for the program, with 9 out of 10 drivers believing that it is important for the police to enforce the hand-held cell phone law.

Observed cell phone use decreased in both sites by the end of the fourth wave of the *Phone in One Hand, Ticket in the Other* demonstration program. Before the distracted driving programs began, observed cell phone use in Syracuse was about half that of the rest of the Nation and Hartford was close to the average. Both

States have had hand-held cell phone bans while driving for some time—enacted in 2001 in New York and 2005 in Connecticut. After the fourth wave of the high-visibility enforcement campaign, hand-held cell phone use decreased 32% in Syracuse (from 3.7% to 2.5%) and 57% in Hartford (from 6.8% to 3.9%) and with some fluctuations over the year observed use finished much lower than the baseline. The laws alone may have served to keep these States' rates at or below the national average, but the addition of high-visibility enforcement and media emphasizing the enforcement drove the rates down even lower.

Typically, periodic enforcement waves yield a ratcheting effect, or fluctuation between waves where the observed behavior reverts close to previous levels. The ratcheting effect was very slight in both sites, occurring in some but not all waves for observed hand-held use or manipulating electronic devices. Generally there was a steady decline in the comparison sites, as well. This is a promising finding and suggests that social norms towards phone use and texting while driving may be shifting, becoming less acceptable behaviors to the public.

The law enforcement agencies in both sites exceeded program expectations. Ticketing rates around 20 citations per 10,000 population have been shown effective in seat belt enforcement programs, a rate deemed sufficient to change motorists' behaviors. Enforcement rates for the distracted driving demonstration programs in Syracuse and Hartford were more than five times that benchmark. Officers reported that they were enthusiastic about the dedicated advertising that focused on their increased enforcement. They reported that coordinated enforcement activities with neighboring law enforcement agencies expanded the visibility of their enforcement efforts. They reported positive public reactions—the general theme for both officers and motorists was that “it was about time.” The positive public reaction may have reinforced officer efforts and contributed to heightened levels of enforcement.

There are challenges to enforcing hand-held cell phone and texting bans. The most obvious challenge is the difficulty in observing the offense. Syracuse law enforcement officers preferred roving patrols and found higher observation locations or taller vehicles like SUVs useful in seeing down into a passenger vehicle to observe texting offenses. Hartford officers found the spotter, or stationary, strategy effective but both chose strategies that suited their community and resources. Both used other strategies as well. Because this was a demonstration

program, additional reporting paperwork was required to document activity and results. The Hartford officers felt that their post ticketing paper work was more time consuming than a seat belt ticket and they worked to improve the administrative demands.

These demonstration programs document that NHTSA's high-visibility enforcement model can be effectively applied to distracted driving enforcement and that various law enforcement strategies can be used to observe and ticket cell phone and texting violations. Targeted behaviors were reduced during each of the waves and ended lower than the baseline in all sites, test as well as comparison sites. Surveys at the sites indicate there is widespread support from motorists and law enforcement for cell phone and texting enforcement. These demonstrations confirm earlier efforts with occupant protection, impaired driving, aggressive driving, and speed that high-visibility enforcement campaigns encourage compliance with State laws and modify behavior.

NHTSA's Office of Behavioral Safety Research plans to publish a full detailed technical report detailing data collection for all four waves.

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Figure 12
Connecticut: Percent of Drivers Observed Holding Hand-Held Phone to Ear

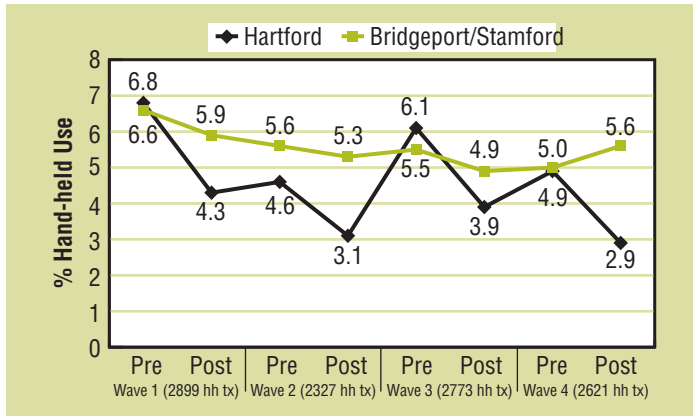


Figure 13
Connecticut: Percent of Drivers Observed Manipulating Hand-Held Phone

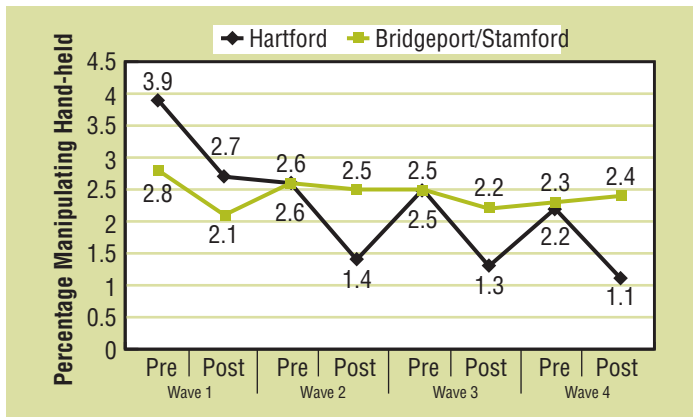
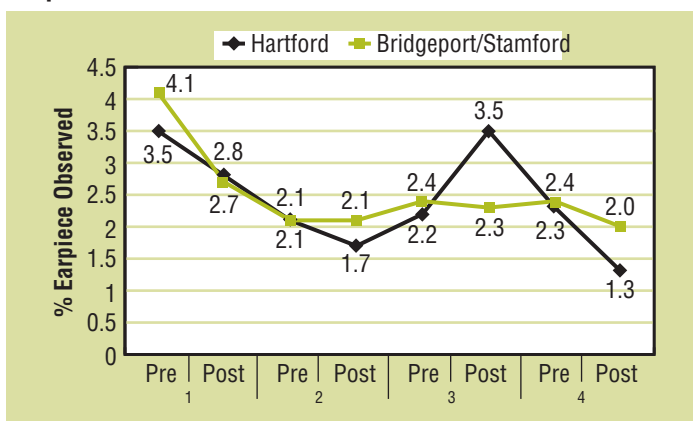


Figure 14
Percent of Connecticut Drivers Observed Wearing an Earpiece



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National Highway Traffic Safety Administration

Figure 15
New York: Percent of Drivers Observed Holding Hand-Held Phone to Ear

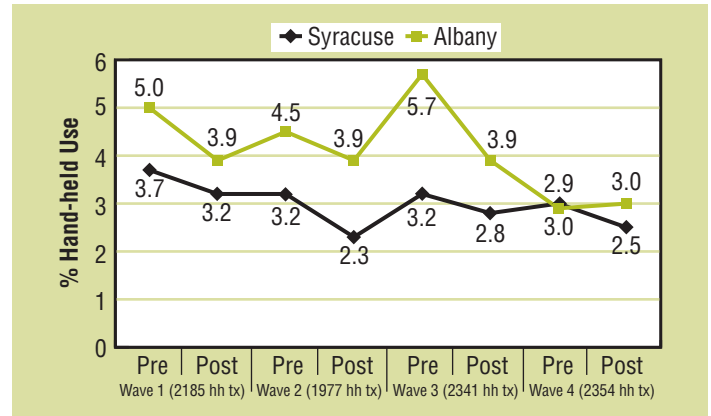


Figure 16
New York: Percent of Drivers Observed Manipulating Hand-Held Phone

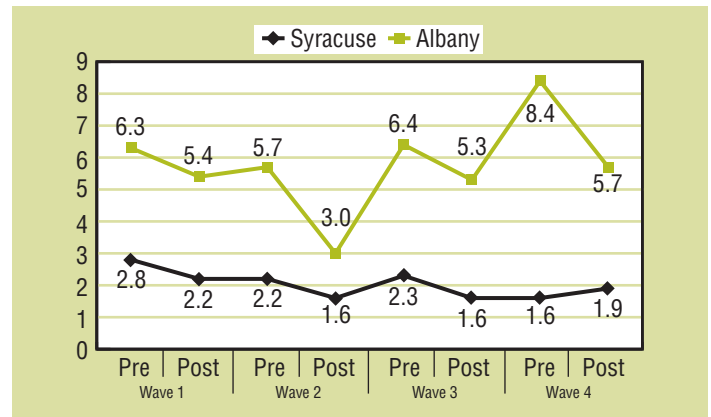
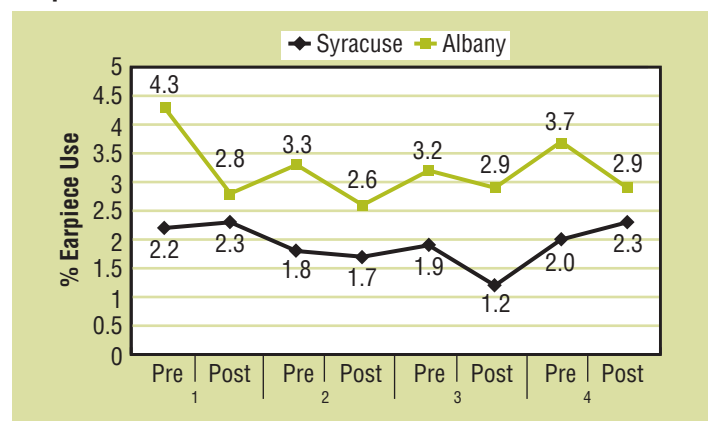


Figure 17
Percent of New York Drivers Observed Wearing an Earpiece



This research note and other general information on highway traffic safety may be accessed by Internet users at: www-nrd.nhtsa.dot.gov/CATS/index.aspx