

ITSMR Research Note



KEY FINDINGS

- ❖ 15% (1.7 million) of New York's 11.3 million licensed drivers are responsible for the majority of incidents of drinking and driving in the state each year.
- ❖ There are approximately 85,000 incidents of drinking and driving every day in New York State.
- ❖ Approximately one out of every 500 incidents of drinking and driving results in an arrest.

Drinking and Driving Behavior of Motorists in New York State

ABSTRACT

For policy makers and traffic safety advocates across New York State, the problem of impaired driving raises the critical questions of "How many New Yorkers drink and drive?" and "How frequently do they engage in this behavior?" To address these questions, New York's Governor's Traffic Safety Committee (GTSC) recently funded the Institute for Traffic Safety Management and Research (ITSMR) to conduct an impaired driving research study whose key component sought to establish an estimate of how many motorists drink and drive and how often. The study involved a telephone survey of 865 New York State drivers to collect information on their perceptions, attitudes, knowledge, and behaviors related to drinking and driving. The data captured on their drinking and driving behavior were analyzed to answer the study's primary research questions related to the frequency of drinking and driving on New York's roadways. Key findings are noted in the box on the left.

INTRODUCTION

Over the last 25 years, New York has made significant strides in reducing the incidence of impaired driving on its roadways. The number of alcohol-related fatal crashes has declined by 48%, dropping from 682 in 1984 to 355 in 2008 (Graph 1). Despite this dramatic decline, there is concern that further progress will be difficult to achieve. This is evidenced by the fact that the proportion of fatal

crashes involving alcohol has been on an upward trend in recent years, increasing from 24% in 2004 to 28% in 2008. To address this concern, New York's Governor's Traffic Safety Committee (GTSC) recently funded the Institute for Traffic Safety Management and Research (ITSMR) to conduct a study to establish an estimate of how many motorists drink and drive and how often. This research note reports on the key findings of that study.

The study was designed to supplement and expand the work undertaken in 2007 and 2008 to build a computer simulation model that examined the flow of impaired driving offenders through the system, from the time of arrest to relicensing by the New York State Department of Motor Vehicles. Approximately 64,000 drivers have been arrested annually for impaired driving in recent years. Built to replicate these historical data, the model was used to explore the effectiveness of various policies and legislative sanctions on the system. The model tested many different “best case” scenarios, examining the impact a 100% effectiveness rate of specific policies and sanctions would have on the

system. While the findings from these “what if” tests indicated that some policies and sanctions were highly effective in reducing recidivism, none of the policies or sanctions tested had an effect on first time offenders.

The model further indicated that a large number of motorists who are drinking and driving are not being captured by the system. This finding raised important questions related to who these drinking drivers are and what can be done about reducing their numbers. To generate the historical number of persons arrested, the model uses a “probability of arrest” rate of 1 in 200 or .005, with the number of persons drinking and driving being based on

the number of licensed drivers. The model showed that differences in the size of the pool of drivers who drink and drive and the number of times a motorist must drink and drive each year to generate the historical data highlighted the importance of obtaining a better estimate of the extent to which motorists drink and drive. Hence, the primary goal of the study was to determine how many motorists drink and drive and how often.

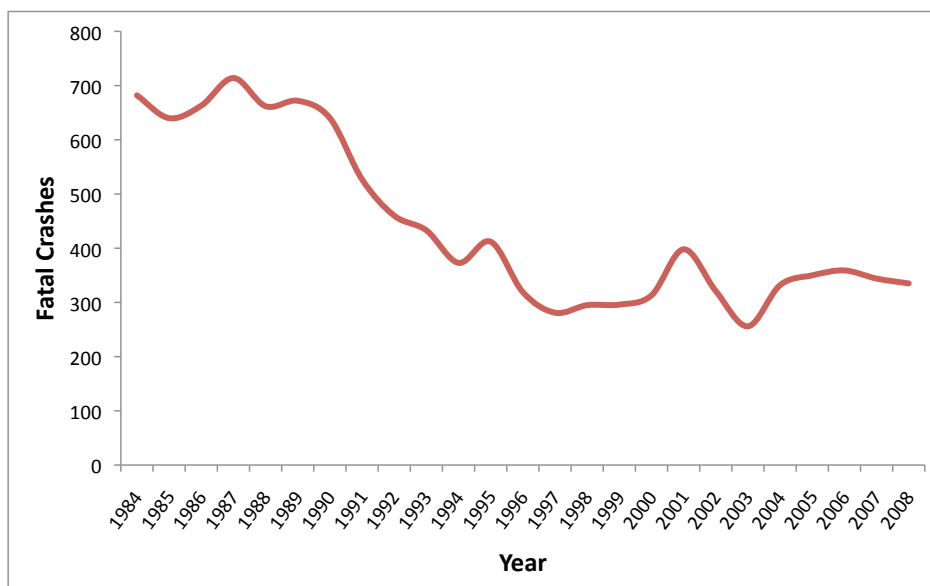
STUDY DESIGN

The key research questions addressed by the study were “How many motorists drink and drive?” and “How frequently do they engage in this behavior?” To address these specific questions, the study included a telephone survey of New York State drivers.

TELEPHONE SURVEY OF NEW YORK STATE DRIVERS

Conducted by Fact Finders, Inc., a marketing research firm located in Albany New York, the telephone survey was designed to provide representative and reliable measurements of New York State drivers’ perceptions, attitudes, knowledge, and experiences related to drinking and driving. In order to reliably measure

**Graph I
NYS Alcohol-Related Fatal Crashes**



public opinion in New York State, a scientific random probability sample was designed. The sample was comprised of 865 randomly selected respondents living in one of New York State’s 62 counties and driving at least a few times a year.

RESULTS

DRIVERS WHO DRINK

In 2008, there were approximately 11.3 million licensed drivers in New York State. The weighted data from the telephone survey were used to estimate how many of these licensed drivers drink. As shown in Table 1, 76% of the survey respondents drink alcoholic beverages. Applying this percentage to the number of New York State licensed drivers indicates that approximately 8.6 million licensed drivers drink alcoholic beverages. The estimated 8.6 million licensed drivers who drink does not mean that these people all drink and drive. Rather, because they drink alcohol and are licensed to drive a motor vehicle, the 8.6 million represents an upper limit on the pool of people who could potentially drink and drive.

DRIVERS WHO DRIVE AFTER DRINKING

The survey respondents interviewed who said they drink alcoholic beverages were asked a series of questions about their driving behavior after consuming alcohol. In

response to these questions, 41% of the 865 survey respondents had driven after consuming alcohol at least once in the past year (Table 2). Extrapolating to the general licensed driver population, an estimated 4.6 million licensed drivers operated a motor vehicle after having consumed alcohol in the past year. This does not mean that all these people drove while impaired. For example, some may have driven after consuming only a small amount of alcohol or delayed their driving after drinking.

The estimated pool of 4.6 million licensed drivers, who have driven after drinking, can be further subdivided based on the responses to other survey questions regarding the amount of alcohol they usually consume and the frequency with which they drink. Table 2 shows that 15% of the 865 survey respondents said they had driven after drinking in the past year and usually consume three or more drinks. Applying this proportion to the 11.3 million NYS licensed

drivers indicates that approximately 1.7 million drivers have driven after three or more drinks.

These 1.7 million drivers can be further subdivided based on the survey respondents’ reported frequency of consuming alcohol. One percent of the survey respondents drink on a daily basis, two percent drink 3 to 4 times a week, five percent drink on weekends only, and six percent drink occasionally (Table 2). The results from applying this frequency distribution to licensed drivers are also shown in Table 2. For example, it is estimated that about 260,000 motorists drive 3 to 4 times a week after typically consuming 3 or more drinks in each incident.

INCIDENTS OF DRINKING AND DRIVING

Further analyses were conducted to estimate the total number of incidents of drinking and driving that occur each year. The first step in deriving that estimate involved multiplying the number of drinking drivers by their

Table 1 Drinking Behavior		
Do you drink alcoholic beverages?	Survey Respondents (N=865)	NYS Licensed Drivers (N=11,284,545)
Yes	76.1%	8,587,539
No	23.6%	2,663,152
Unknown	0.3%	33,854

Table 2
Estimate of Drinking Incidents in New York State

	Survey Respondents	NYS Licensed Drivers	Estimated Days /Yr	Estimated Drinking Incidents/Yr
Total	865	11,284,545		128,779,227
Motorists Who Drink	76.1%	8,587,539		
Motorists Who Have Driven After Drinking in Past Year	40.8%	4,604,094		
Motorists Who Have Driven After Drinking at Least Once in the Past Year and Usually have 3+ Drinks	15.1%	1,703,966		
Daily	1.0%	112,845	365	41,188,589
3 to 4 times week	2.3%	259,545	182	47,237,105
Weekends	5.4%	609,365	52	31,687,002
Occasionally	6.4%	722,211	12	8,666,531

The statistical sampling error is +/- 3.3 percentage points at the 95% confidence level.

frequency of drinking (Table 2). For example, the 112,845 drivers who drink daily (i.e., 365 times per year) were estimated to generate 41,188,589 incidents of drinking and driving in a year. As indicated in Table 2, there are an estimated 129 million potential incidents of drinking and driving in New York State each year.

To determine how many of the 129 million potential drinking incidents involved driving, analyses were conducted using the weighted data from the telephone survey with regard

to the extent motorists drink outside their home and use a motor vehicle to get to and from these other locations. As shown in Table 3, of the survey respondents who have driven after drinking in the past year and usually have 3 or more drinks in each event, the proportion who drink someplace other than at home ranged from 23% for drivers drinking daily or 3 to 4 times a week to 77% for those who drink occasionally. Multiplying the estimated number of drinking incidents per year by these proportions indicates that there are an estimated 38

million incidents of drinking outside the home each year.

The final step of the analysis sought to estimate how many of the 38 million incidents of drinking outside the home each year involved driving. To derive this estimate, the weighted data from the telephone survey with respect to whether a motorist usually drove to/from the drinking location were analyzed. As shown in Table 3, 78% of the drivers who drink daily or drink 3 to 4 times a week usually get to/from the location by driving their

Table 3
Estimate of Incidents of Drinking and Driving in New York State

	Estimated Total Drinking Incidents/Yr	Proportion of Respondents Who Usually Drink at Location Other Than Home	Estimated Incidents of Drinking at Locations Other Than Home/Yr	Proportion of Respondents Who Usually Drive To/ From Drinking Location	Estimated Incidents of Drinking and Driving/Yr
Motorists Who Have Driven After Drinking at Least Once in Past Year and Usually Have 3+ Drinks	128,779,227		38,101,589		31,183,559
Daily	41,188,589	23%	9,473,375	78%	7,389,233
3 to 4 times a week	47,237,105	23%	10,864,534	78%	8,474,337
Weekends	31,687,002	35%	11,090,451	90%	9,981,406
Occasionally	8,666,531	77%	6,673,229	80%	5,338,583

vehicle, compared to 90% of those who drink only on weekends and 80% of those who drink occasionally. In total, it is estimated that there are 31 million incidents of drinking and driving each year on New York's roadways, which represents an average of more than 85,000 incidents of impaired driving per day.

PROBABILITY OF ARREST FOR DRINKING AND DRIVING

The results of the above analyses were then used to estimate the probability of being arrested for drinking and driving in New York State. To calculate the probability of arrest, the estimated number of drinking and driving

incidents (31,183,559) was divided by the number of people arrested in 2008 (64,800). The results show that for every 481 incidents of drinking and driving, one driver is arrested, representing a probability of arrest of 0.0021 (1 out of 481).

SUMMARY

The estimates of how many motorists in New York drink and drive and how often they engage in this behavior should assist the state's policy makers and traffic safety advocates in developing and implementing new programs and policies designed to reduce drinking

and driving on the state's roadways.

Although the primary purpose of this study was to establish an estimate of how many motorists drink and drive and how often, the study also sought to determine what would influence drinking drivers to change their behavior. This aspect of the study and other issues related to impaired driving will be presented in future research notes.

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