

Rhode Island Child Death Review: Motor Vehicle Accident Deaths, 2008–2013

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Motor vehicle accidents are the leading cause of death for young people ages 15 to 20 in the United States.¹ Fortunately, over the last ten years, there has been a significant decline in teen driver fatalities. Between 2003 and 2012, fatalities dropped 49% – from 7,937 to 4,283.² In Rhode Island, unintentional injury from motor vehicle accidents is also a leading cause of death for young people ages 15 to 24. The rate of motor vehicle fatalities within this age group is substantially higher than any other.³

Research has shown that teen drivers are especially at risk for fatal motor vehicle accidents because they lack experience and judgment.⁴ Presence of passengers, night driving, drinking, and non-use of seatbelts are all factors that further jeopardize a young driver's safety.⁵ This report aims to summarize the relevant circumstances around fatal motor vehicle accidents in Rhode Island involving youth from 2008 to 2013. The review will include data both before and after the 2011 passage of Rhode Island's primary enforcement seat belt law, which enabled police to issue citations based solely on the observation of an unbelted driver or passenger.

METHODS

The **Rhode Island Child Death Review Team** (RICDRT) reviewed motor vehicle related deaths of drivers, passengers, and pedestrians ages 0 to 24 that occurred in Rhode Island and were reported to the Office of the State Medical Examiner (OSME) from 2008 to 2013. Demographic, clinical and death scene information was abstracted from OSME record source documents which included autopsy, toxicology, and police reports, medical records, and other sources as available. Toxicology reports noted the presence of alcohol, prescription drugs, or illicit drugs upon autopsy but were unable to determine if drugs were prescribed, were used as prescribed, or had impaired the individual. Due to small sample sizes in individual years, OSME data are presented in 3-year aggregates from 2008 to 2010 and from 2011 to 2013 – both before and after the passage of Rhode Island's primary seatbelt law.

Youth Risk Behavior Survey (YRBS) data were obtained from the Rhode Island Department of Health. The YRBS is a program administered by the CDC which monitors health risk behavior in high school and

Table 1. Motor Vehicle Deaths among Youth in Rhode Island, 2008–2013

		2008–2010		2011–2013		2008–2013	
		#	%	#	%	#	%
Total		70	-	43	-	113	-
Deaths by Gender	Female	22	31%	17	40%	39	35%
	Male	48	69%	26	60%	74	65%
	n	70	-	43	-	113	-
Deaths by Race	White	66	94%	37	86%	103	91%
	Black	3	4%	2	5%	5	4%
	Asian	1	1%	0	0%	1	1%
	American Indian	0	0%	2	5%	2	2%
	Unknown	0	0%	2	5%	2	2%
	n	70	-	43	-	113	-
Deaths by Ethnicity	Non-Hispanic	60	86%	29	67%	89	79%
	Hispanic	9	13%	11	26%	20	18%
	Unknown	1	1%	3	7%	4	4%
	n	70	-	43	-	113	-
Deaths by Age	0-15	5	7%	5	12%	10	9%
	16-19	21	30%	15	35%	36	32%
	20-24	44	63%	23	53%	67	59%
	n	70	-	43	-	113	-
Deaths by Rider Type	Driver	36	51%	23	53%	59	52%
	Passenger	20	29%	14	33%	34	30%
	Pedestrian	13	19%	6	14%	19	17%
	Unknown	1	1%	0	0%	1	1%
	n	70	-	43	-	113	-
Seat Belt Use*	Belted	7	14%	7	23%	14	17%
	Not Belted	40	78%	18	58%	58	71%
	Unknown	4	8%	6	19%	10	12%
	n	51	-	31	-	82	-
Substance Use**	Any Alcohol or Drugs	43	61%	26	60%	69	61%
	No Alcohol or Drugs	27	39%	17	40%	44	39%
	n	70	-	43	-	113	-

Notes: Unless otherwise noted, data includes drivers, passengers, and pedestrians who died in automobile or motorcycle accidents.

*Seat Belt Use: Pedestrian fatalities and motorcycle accidents were excluded.

**Substance Use: "Any Alcohol or Drugs" includes all fatalities with alcohol or drugs noted in the toxicology report upon autopsy.

middle school students by surveying students at a sample of schools in participating states every two years. The Rhode Island survey results selected for this report concern motor vehicle risk behavior including the use of seat belts, drinking and driving, and texting while driving. YRBS data are presented by gender and by year – 2009, 2011, and 2013.

RESULTS

From 2008 to 2013, there were 113 youth deaths (ages 0–24) related to motor vehicle accidents. Fifty-nine fatalities were drivers (52%), 34 were passengers (30%), and 19 were pedestrians (17%). The majority of fatalities were male (65%), white (91%), or Non-Hispanic (79%). Sixty-seven fatalities were between the ages of 20 and 24 (59%), 36 between the ages of 16 and 19 (32%), and 10 between the ages of 0 and 15 (9%). See **Table 1**.

Between the two 3-year aggregates, the number of fatalities declined. Seventy deaths occurred between 2008 and 2010 and 43 deaths occurred between 2011 and 2013. The percentage of fatalities was highest among drivers and passengers not wearing seat belts in both aggregates. The absolute number of all fatalities with alcohol or drugs noted in the toxicology report upon autopsy declined from 43 to 26. See **Table 1**. The absolute number of driver fatalities with alcohol noted in the toxicology report upon autopsy also declined from 18 to 11. See **Figure 1**.

Supplemental data obtained from the YRBS for 2009, 2011, and 2013 show a marked decline in percentage of individuals surveyed who reported never or rarely wearing a seat belt. In each survey year, females appeared less likely to report never or rarely wearing seat belts than males. Respondents were also more likely to report recently riding with a driver

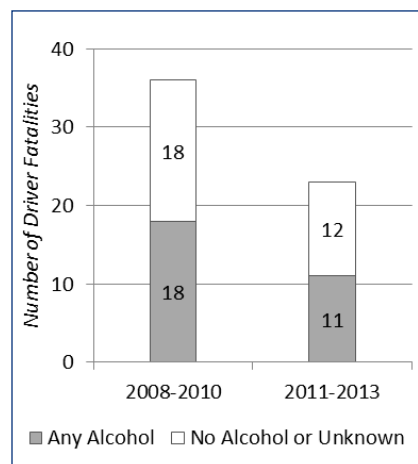
who had been drinking than never or rarely wearing a seat belt. In 2013, males (11.4%) were more likely to report driving when drinking alcohol than females (4.8%). Notably, a higher percentage of both male and female respondents reported texting or e-mailing while driving in 2013 than riding with a driver who had been drinking, driving when drinking alcohol, or never or rarely wearing a seat belt. See **Figure 2**.

DISCUSSION

The OSME data show a decline in youth driver and passenger fatalities from motor vehicle accidents in Rhode Island, which is in line with the national trend. The YRBS data show an increase in reported seat belt use among high school students, consistent with the Rhode Island Department of Transportation Office of Highway Safety's findings for all ages.⁶ It is unclear whether the decline in youth driver and passenger fatalities can be directly attributed to the increase in seat belt use or the primary seat belt law. However, the literature does show that states with a primary law have higher rates of seat belt use and lower rates of motor vehicle fatalities for all drivers when compared to states with a secondary law or no law.^{7,8}

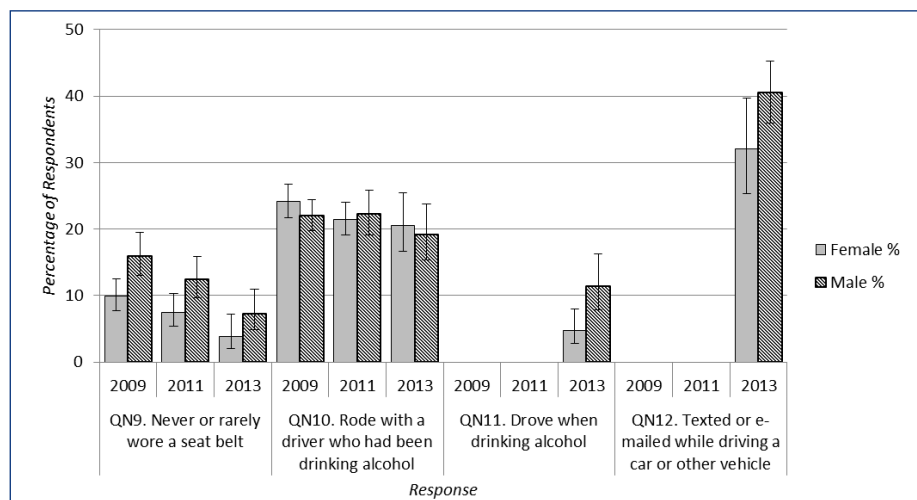
The OSME data also show a decline in the absolute number of driver fatalities that had alcohol noted in the toxicology report upon autopsy. This finding may speak to the success of enforcement, public campaigns, and other efforts to change social norms around drinking and driving. However, the alarmingly high percentage of YRBS respondents who reported recently riding with a driver who had been drinking alcohol strongly supports the continuation of efforts to improve statewide prevention strategies.

Figure 1. Driver Fatalities and Alcohol Use, 2008–2013



Notes: Figure 1 includes all driver fatalities in both automobile and motorcycle accidents. Any alcohol refers to alcohol noted in the toxicology report upon autopsy.

Figure 2. Rhode Island High School Youth Risk Behavior Survey, Motor Vehicle Risk Behavior, 2009–2013 (YRBS)



Note: QN11 and QN12 were not available for 2009 and 2011. QN10, QN11, and QN12 refer to activity thirty days prior. QN11 and QN12 only included respondents who had driven a car in the past thirty days. Confidence intervals are 95%.

The YRBS data indicate that texting while driving is a pervasive problem amongst young drivers in Rhode Island. Going forward, it will be important to monitor this risky behavior closely. Furthermore, while most states, including Rhode Island, have primary all-driver texting bans, it is unclear whether these laws change behavior.⁹ Therefore, coordinated strategies that go beyond policy and enforcement are needed. Parents may be a valuable resource in this effort. While parental engagement has been shown to reduce unsafe driving behaviors, parental support for graduated driver licensing restrictions is often mixed.^{10,11} Improving parental involvement through enhanced parent-teen driver programs would be beneficial. Healthcare providers also have an important role to play. Questions about risky behavior, including the use of cigarettes, alcohol, and drugs, have long created opportunities for education within the primary care setting.¹² It would be appropriate for these conversations about risk to also address distracted driving.

In conclusion, while youth fatalities from motor vehicle accidents appear to be decreasing both nationally and in Rhode Island, there is still considerable room for improvement within this tragic public health problem.

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