Christmas Day 2016 and New Year's Day 2017 Holiday Period Traffic Fatality Estimates

Christmas, 2016

The 2016 Christmas Day holiday period begins at 6:00 p.m., Friday, December 23, and ends at 11:59 p.m., Monday, December 26. Our estimate of traffic fatalities for this 3.25-day holiday period is **314** deaths with a 90% confidence interval (C.I.) of **274** to **358** deaths. Medically consulted injuries are estimated at 37,200 with a range of 31,300 to 43,700. A medically consulted injury is an injury serious enough that a medical professional was consulted. The estimated fatality total for 2016 is 1% less than the average number of fatalities (318) that occurred during the previous six 3.25-day Christmas Day holiday periods. An evaluation of recent Christmas Day holiday period estimates is presented in Table 1.

Table 1. Evaluation of Recent Christmas Day Holiday Period Estimates

Year	Number of Days	Estimate	90% Confidence Interval	Actual
2011	3.25	287	220-365	256
2012	4.25	377	320-441	351
2013	1.25	105	82-132	88
2014	4.25	366	330-407	355
2015	3.25	307	259-362	273

Studies have shown that seat belts are 45% effective in preventing fatalities. Although the reduction in the risk of fatal injury from wearing seat belts is higher for light-truck occupants at 50%, the lower figure for passenger car occupants is used in the calculations here as the more conservative measure. The most recent data from the Fatality Analysis Reporting System (FARS) indicate that seat belt use by fatally injured passenger car and light truck occupants was 47.4%. Based on this information it is estimated that **122** person's lives may be saved this Christmas Day holiday period because they will wear their safety belts and an additional **74** lives could be saved if all wore safety belts.

The average number of traffic fatalities during the six most recent 3.25 day Christmas Day holiday periods was 11.9% lower than similar non-holiday periods (318 vs. 361 deaths). The difference is *not* statistically significant.

New Year's, 2017

The 2017 New Year's Day holiday period begins at 6:00 p.m., Friday, December 30, 2016 and ends at 11:59 p.m., Monday, January 2, 2017. Our estimate of traffic fatalities for this 3.25-day holiday period is **364** deaths with a 90% confidence interval (C.I.) of **314** to **420** deaths. Medically consulted injuries are estimated at 41,900 with a range of 36,200 to 48,300. A medically consulted injury is an injury serious enough that a medical professional was consulted. The estimated fatality total for 2017 is 2% less than the average number of fatalities (373) that occurred during the previous six 3.25-day New Year's Day holiday periods. An evaluation of recent New Year's Day holiday period estimates is presented in Table 2.

Table 2. Evaluation of Recent New Year's Day Holiday Period Estimates

Year	Number of Days	Estimate	90% Confidence Interval	Actual
2011	3.25	308	259-364	304
2012	3.25	297	249-353	348
2013	4.25	407	347-475	343
2014	1.25	156	124-194	126
2015	4.25	421	367-481	355*

*=outside of 90% confidence interval.

Studies have shown that seat belts are 45% effective in preventing fatalities. Although the reduction in the risk of fatal injury from wearing seat belts is higher for light-truck occupants at 50%, the lower figure for passenger car occupants is used in the calculations here as the more conservative measure. The most recent data from the Fatality Analysis Reporting System (FARS) indicate that seat belt use by fatally injured passenger car and light truck occupants was 47.4%. Based on this information it is estimated that **141** person's lives may be saved this New Year's Day holiday period because they will wear their safety belts and an additional **86** lives could be saved if all wore safety belts.

The average number of traffic fatalities during the six most recent 3.25 day New Year's Day holiday periods was 19.6% *greater* than similar non-holiday periods (373 vs. 312 deaths). The difference *is* statistically significant at the .05 level.

The terms used in the above discussions were chosen carefully to reflect the level of accuracy of the quantities involved. *Estimate* is used because the fatality figures are calculated approximately, as opposed to the precision of calculation inferred by the use of the word *predict*. *May* is used to indicate the figures express a contingency, whereas *will* is used to express something that may be expected or is supposed to occur.

Details of the estimating methodology and a discussion of holiday deaths compared to non-holiday periods are included in the attached papers.

If you would like your name deleted from the distribution list for the holiday estimates, please let me know via return e-mail.