Contribution of Alcohol-Impaired Driving to Motor Vehicle Crash Deaths in 2005

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Although it is well-known that alcohol-impaired driving increases crash risk, the number of crash deaths specifically attributable to alcohol-impaired driving is less well-known. Many fatal crashes occur with only sober drivers, and many fatal crashes of drinking drivers would still have occurred if they had not been drinking. In order to understand what is possible with different countermeasures — for example, those aimed at convicted offenders or high BAC drivers versus those targeted at the general population of drivers — it is important to know how much of the problem is accounted for by the drinking habits of the different target populations.

In this paper we describe a calculation procedure for estimating the number of crash fatalities in the 2005 Fatality Analysis Reporting System attributable to different BACs. The procedure first classifies all fatalities by the highest imputed BAC for driver(s) involved in the crash. Then, using the risk curve developed by Zador et al. (2000), the number of fatalities specifically attributable to the high BACs is estimated.

It is estimated that drivers with BACs at or above 0.08 g/dL were involved in the deaths of 13,215 road users in the U.S. in 2005 and that, had all these drivers had BACs below 0.08 g/dL, 8,010 of these deaths would have been prevented — this is the number of deaths attributable directly to BACs above 0.08 g/dL. Had none of them had BACs greater than 0.02 g/dL, then it is estimated that 11,612 of these deaths would have been prevented. If all drivers in 2005 had had BACs below 0.02 g/dL, the calculation indicates as many as 12,831 deaths would have been prevented.

The paper will enlarge on these example findings to discuss the relative contribution of other BACs to the total fatality counts and also examine the contributions of drivers with previous alcohol-impaired driving offenses on their records. These results are intended to quantify the potential benefits of technology that would prevent people in different target populations from operating motor vehicles with high BACs.

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