

Effectiveness of .08 and .05 BAC Limits for Driving

By James C. Fell, NORC at the University of Chicago and Michael Scherer, Pacific Institute for Research and Evaluation

Abstract

Introduction: The National Transportation Safety Board (NTSB), an independent federal agency dedicated to promoting transportation safety, issued a report in 2013 recommending, among other measures, that states should lower the illegal blood alcohol concentration (BAC) limit for driving from .08 grams per deciliter (g/dL) to .05 g/dL. The NTSB provided a sound rationale in their report and concluded that lowering the BAC limit to .05 or lower has a strong evidence-based foundation. Most industrialized nations have already enacted a .05 illegal BAC limit. However, there was a lack of enthusiastic support from some key safety organizations. This study was undertaken to contribute significantly to the scientific evidence as to whether lowering the BAC limit to .05 will be an effective alcohol policy in the United States.

Methods: Our first objective was to estimate the potential effectiveness of reducing the illegal BAC limit for driving from .08 to .05 in the United States. We accomplished this aim by 1) conducting a meta-analysis on qualifying international studies to estimate the range and distribution of the most likely effect size from a reduction to a .05 BAC limit, 2) assessing what factors varied among the selected studies that moderated the effect size, 3) translating this synthesis toward estimating the potential benefits in the United States of reducing the current .08 limit to .05 BAC, and 4) analyzing the life-saving benefits achieved by the .02 reduction (from .10 to .08 BAC) in the limit in the United States and using those savings to estimate the benefits of the proposed .03 reduction in the legal limit from .08 to .05 BAC.

Our second objective was to determine the effectiveness achieved by reducing the illegal per se BAC limit for driving from .10 to .08 in all 50 states and the District of Columbia (DC). Under this aim, we 1) estimated the lives saved since 1983 due to the adoption of .08 BAC laws, 2) compared the effects from early-adopting states (under state initiatives during 1983-1999) to the effects of late-adopting states (under federal incentive influence from 2000 and later), and 3) determined the effects on drivers with low BACs (.01-.07) and with high BACs (.08+ and .15+). We then integrated the results from both studies to estimate the potential effects of lowering the BAC limit to .05 in each state.

Results: In our first study (the meta-analysis of studies on lowering the BAC limit in general), we found no effect on variables related to alcohol consumption, a 4.9 percent decline in non-fatal alcohol-related crashes, a 9.1 percent decline in fatal alcohol-related crashes from lowering the BAC to .08, and an 11.1 percent decline in alcohol-related fatal crashes from lowering the BAC to .05 or lower. We estimate that doing so would save 1,790 lives each year if all states adopted a .05 BAC limit. The second study of the total effects of lowering the BAC from .10 to .08 in the United States from 1982 to 2014 in all 50 states and DC showed an overall effect of 10.4 percent reduction on alcohol-related fatalities. From that study, we estimate that lowering the BAC limit to .08 in the United States has saved 1,736 lives each year between 1983 and 2014 and 24,868 lives in total.

Conclusions: Both studies provide strong evidence of the relationship between lowering the BAC limit for driving and the general deterrent effect on alcohol-related fatal (and non-fatal) crashes. While there may be arguments against lowering the BAC limit to .05 g/dL, the life-saving potential appears to be worth the effort. Opponents of lowering the BAC limit should take note that alcohol consumption was not significantly affected by lowering the limit to .05 BAC.

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