



# National Safety Council Alcohol, Drugs and Impairment Division

## REPORT OF THE ALCOHOL SECTION

SEATTLE, WASHINGTON

February 17, 2014

Section Co-Chairs: Kurt M. Dubowski, Ph.D. and Mack Cowan

Section members: Pat Harding, Alka Lohmann, Michelle Spirk and Jeff Teitelbaum

Mr. Chairman,

In May 2013 the National Transportation Safety Board recommended that all states adopt a per se blood alcohol concentration (BAC) limit of 0.05 or lower for all drivers. The National Safety Council does not have a policy position that supports this recommendation and has asked the Alcohol, Drugs and Impairment Division to assist them in forming an opinion.

The Alcohol Section was assigned the task of determining whether reducing the per se alcohol concentration limit from 0.08 to 0.05 or lower is scientifically sound and supported by the peer reviewed literature. Three members of the Alcohol Section, Dr. Kurt Dubowski, Pat Harding and Mack Cowan, assisted Past Chair Dr. Dennis Canfield with a recently published paper on this topic<sup>1</sup>. The paper concludes the scientific data supports the NTSB recommendations with a modification that alcohol concentration be reported in breath (BrAC) as well as blood (BAC). The Alcohol Section will continue to work with the rest of the ADID on this matter.

The Alcohol Section is planning to study the determination and reporting of accuracy, precision (e.g., confidence intervals, etc.) and other concerns surrounding the uncertainty of measurement for blood alcohol testing, breath alcohol instrument calibration and evidential breath alcohol testing. The goal would be to issue a statement, not necessarily a position, on the topic. Uncertainty of measurement is being calculated in various governmental jurisdictions and by commercial laboratories, but there is little or no uniformity. Uncertainty of measurement for blood alcohol testing and evidential breath alcohol instrument calibration is fairly straightforward, but uncertainty of measurement for breath alcohol testing may be more challenging.

Simultaneously, the Alcohol Section will review our recommendation on subject test agreement for duplicate evidential breath alcohol tests.

**RECOMMENDATION OF THE SUBCOMMITTEE ON TECHNOLOGY  
DUPLICATE BREATH ALCOHOL TESTING**

**October 1986**

At least two separate breath samples should be collected and analyzed individually in performing any quantitative evidential breath-alcohol analysis. The breath samples should be collected at intervals of not less than 2 nor more than 10 minutes, after an initial deprivation period of at least 15 minutes. Reported breath-alcohol analysis results shall be truncated to two decimal places; and all results obtained shall be reported. Consecutive breath-alcohol analysis results within 0.02 g/210 L, without regard to sign, shall be deemed to be in acceptable agreement.

One of the few papers to deal with uncertainty of measurement for evidential breath alcohol testing proposes a method for calculating expanded uncertainty that, at or near 0.08 g/210 L, is less than our current duplicate breath alcohol testing agreement recommendation<sup>2</sup>. This could create a situation where the actual evidential instrument results fall outside of the calculated expanded uncertainty range. While the expanded uncertainty may be statistically valid, judges and juries are likely to be skeptical when this occurs.

Respectfully submitted,

*J. Mack Cowan*

Mack Cowan  
Co-Chair Alcohol Section

<sup>1</sup>Canfield, DE, Dubowski, KM, Cowan, M, Harding, PM. "Alcohol Limits and Public Safety," Forensic Science Review, Jan. 2014, Vol. 26 No. 1, pp. 10-19.

<sup>2</sup>Gullberg, RG. "Estimating the measurement uncertainty in forensic breath-alcohol analysis," Accred. Qual. Assur., Nov. 2006, Vol. 11, Issue 11, pp. 562-568.