



### E27 The Development of a Scientific Working Group for Breath Alcohol Analysis

Brian M. Lutmer, BS\*, Missouri Department of Health and Senior Services, 2875 James Boulevard, Poplar Bluff, MO 63901

After attending this presentation, attendees will understand the importance uniformity has in breath alcohol testing and importance of Scientific Working Groups (SWGs) in establishing and perpetuating the practice of good science in breath alcohol testing.

This presentation will impact the forensic science community by recognizing a need for standardization in breath alcohol testing and outlining a strategy for implementing it through the use of a SWG.

The National Academy of Sciences (NAS) Report: *Strengthening Forensic Science in the United States: A Path Forward* made several recommendations for the advancement of the forensic sciences. Specifically, Recommendation 6 references Scientific Working Groups (SWGs) working with the federal government to establish standards within the relevant forensic communities.

SWGs, originally founded by the FBI in the early 1990's, have been instrumental establishing standard protocols and guidelines within forensic disciplines (e.g., Firearms and Tool Marks, Bloodstain Pattern Analysis, DNA Analysis Methods). Although the SWGs have no enforcement capabilities, they nonetheless are a valuable source for creating and improving recognizable standards.

In October 2009, the Forensic Toxicology Council, with funding from the National Institute of Justice, founded the Scientific Working Group on Toxicology (SWG-TOX). The founding of SWG-TOX reflects the NAS Report's impact and recognition of the need for standardized ethics, training, and methodologies in forensic toxicology. However, SWG-TOX does not anticipate addressing the field of breath alcohol testing due to significant differences in foundational criteria.

Exclusion of breath alcohol testing by SWG-TOX is understandable. The significant program differences include education, training, operation, certification, and administration. Accreditation for breath alcohol calibration laboratories (reference solutions) under ASCLD-LAB/ISO 17025 standards became available in 2008. Unfortunately, only three governmental agency programs in the United States have been accredited. Disparity of personnel qualifications exists between programs. Proficiency testing in alcohol testing is generally non-existent. Furthermore, the Forensic Specialties Accreditation Board does not offer certification for individuals strictly employed in alcohol toxicology.

Standardization of breath alcohol testing must be competently and effectively addressed. The societal and legal ramifications of drunk-driving convictions are profound. Over one million breath alcohol (BrAC) tests are conducted annually in the United States. BrAC results are collected solely for the purposes of license revocations and criminal prosecutions. Frequently the BrAC result is the only evidence of impairment. Accordingly, good science must be practiced in BrAC testing.

Forensic breath alcohol testing must implement established standards through creation of its own scientific working group, the Scientific Working Group on Breath Alcohol Testing (SWG-BAT). Membership would include representatives from the private sector, academia, legal community, governmental agencies, and international bodies. This SWG would establish recommended standards and

discipline for forensic analysis of breath alcohol testing. The objectives of the SWG-BAT must at a minimum include:

- Specifying requirements for operator's knowledge, skills, abilities and competency;
- Promoting professional development;
- Applied ethical standards and viable sanctions for operators and program administrators;
- Providing minimum standards for analyses and reporting of results;
- Long term retention of records and download data (calibration, maintenance, testing, references standards etc.);
- Establishing quality control requirements for testing;
- Proficiency testing for all testing sites and instruments;
- Traceable measurements of uncertainty (error analysis); and,
- Operator and repair technician certifications recognized by the Forensic Specialties Accreditation Board.

Many of the necessary scientific standards for adoption by SWG- BAT are included in the historic recommendations of the National Safety Council's Committee on Alcohol and Other Drugs. Guidance for adoption on other issues is also readily available, from groups such as ASCLD/LAB on operational issues, NIST on the proper handling of measurement uncertainty, and AAFS on issues of ethical conduct and professional development.



## Jurisprudence Section – 2011

---

The time has arrived for creation of a practical scientific working group for standardized requirements and protocols in breath alcohol testing. The tenets and practice of good science must be applied to breath alcohol testing as in other forensic science disciplines. It is in the legal and forensic science community's best interests to implement SWG-BAT.

### **Scientific Working Groups, Breath Alcohol, Standardization**