



Jurisprudence Section - 2015

F27 To Err or Not to Err: How Judges and Jurors Apply “Margin of Error” and “Coefficient of Variation” to Their Determinations of Blood Alcohol Content in Criminal Cases Involving Blood Testing

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After attending this presentation, attendees will better understand the legal requirements of “margin of error” and “coefficient of variation” as applied in the courtroom.

This presentation will impact the forensic science community by providing the bases for “margin of error” and “coefficient of variation” as applied in the law.

In federal courts, federal trial judges apply the Daubert standard to make the preliminary assessment of whether an expert’s scientific testimony is based on methodology that is scientifically reliable and can be properly applied to the facts at issue. In state court jurisdictions, state trial jurisdictions vary on the application of which standard that state court applies for admitting scientific evidence: Daubert, Frye, or a combination of both standards, now coined as Fryebert, states the trial judge may apply each standard separately to the same factual methodology so that two analyses are conducted to cover both bases of Frye and Daubert standards.

When state trial judges apply the Frye standard to determine the admissibility of scientific evidence, the scientific theory must be “generally accepted” in the relevant scientific community. The Daubert standard allows trial judges to evaluate novel scientific evidence using a variety of factors in determining whether the expert’s methodology is valid, such as, but are not limited to, the following: (1) whether the theory or technique in question can be and has been tested; (2) whether the theory or technique has been subjected to peer review and publication; (3) what is the theory’s known or potential error rate; (4) whether there is existence and maintenance of standards controlling its operation; and, (5) whether the theory has attracted widespread acceptance within a relevant scientific community.

This presentation will discuss how “margin of error” and “coefficient of variation” as scientific and legal concepts are viewed by state trial judges, appellate court judges, and juries as reflected in their decisions regarding blood alcohol content in blood tests in criminal cases in a Frye jurisdiction such as Pennsylvania. How are these scientific and legal concepts viewed by these judges and juries in a Frye jurisdiction such as Pennsylvania where scientific methodology need only be “generally accepted” in the relevant field of science? In a Frye jurisdiction, is it an abuse of discretion for a state trial judge to view “margin of error” evidence or “coefficient of variation” evidence in a light most favorable to the commonwealth when the judge considers a challenge to the weight of the evidence? Is the jury “speculating” or trusting that the defendant’s actual blood content was .16% or higher within two hours when no direct or circumstantial evidence is presented to the jury at the time of trial regarding the possible source or basis for the application of a 10% “margin of error?” In a Frye jurisdiction, should the laboratory tests be considered scientifically valid when the testing is done by an approved testing facility in accordance with established “generally acceptable procedures” when the laboratory tests uses only one sample of blood? A judge will grant a new trial based on the weight of the evidence claim in cases where the factfinder’s verdict is “so contrary to the evidence that it shocks one’s sense of justice.” Should there be a grant for a new trial if the jury is not informed of the application of the 10% margin of error in the actual alcohol blood testing result? Does that verdict “shock one’s sense of justice?”

Margin of Error, Frye Jurisdiction, Scientifically Valid