

TOXICOLOGY REPORTER

LIQUOR LIABILITY

PAPE & ASSOCIATES

Specializing in Toxicology

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accident BAC is sometimes the peak or highest BAC experienced by the drinker.

... at the time of last service, there is usually alcohol in the drinker's stomach and there is alcohol in the last alcoholic beverage served to the drinker, ... and the drinker usually experiences a rising BAC that does not reach a peak level until sometime after the last swallow of alcohol.

Retrograde extrapolation is the calculation of BAC at a specific time based on one or more alcohol concentration test result(s) at some later time(s) and what are sometimes unspecified or implicit assumptions. These assumptions usually include the following:

Assumptions that the subject was fully post-absorptive and experiencing a falling BAC between the time of interest and the time of the alcohol concentration test, that the assumed rate of elimination used to calculate the fall in the subject's BAC is reliable, that there were no special factors affecting the subject's post-accident BAC, and that the alcohol test result was reliable.

Example: Assuming that the subject was post-absorptive at the time of the MVA and his BAC was 0.09% 90 minutes after the MVA, what was the BAC at the time of the accident? **Solution:** During the 90 minute post-accident period, the subject's BAC fell about 0.023% (1-1/2 hours x an elimination rate of 0.015% per hour). Therefore, his BAC at the time of the accident was about 0.11%. *Note: The most frequently reported average rate of elimination for adult males is 0.015% BAC per hour.*

Example: Assuming the same facts and a second BAC test result of 0.04% four hours post-MVA, what is the highest reasonable estimate of the subject's BAC at the time of the accident? **Solution:** Assuming that the subject's apparent decline in BAC between the two post-MVA tests reflected the subject's true rate of elimination (0.05% over 2-1/2 hours) at prior times, the apparent rate of elimination would be 0.02% per hour. Therefore, the subject's true BAC at the time of the accident (90 minutes before the first BAC test) would be 0.12%.

Forward extrapolation: Forward extrapolation is based on the analysis of factors that include the time(s) of alcohol service and consumption as well as the time-course and extent of the absorption, distribution, and elimination of alcohol. An alcohol test result is not required; but, when available, the extrapolated BAC and any available BAC test result(s) should be compared.

Range extrapolation: A process that explicitly considers all of the reasonable variables affecting the reliability of the factors involved in the extrapolation of the person's BAC.

Clinical indicia: Depending on the case-specific circumstances, clinical indicia (i.e. visible and/or obvious

signs) of intoxication might include witness testimony regarding the subject's appearance-behavior-demeanor. Indicia of intoxication can sometimes be related to an estimate of the subject's BAC.

Effects of alcohol

Expert case-analysis regarding whether or not the subject would be expected to exhibit visible or obvious indicia of intoxication should include the consideration of all reasonable-and-relevant points of comparisons. Three examples follow.

Impairment Estimation Procedure (IEP)

While a recent study suggests that a behavioral-based Impairment Estimation Procedure (IEP) can be used to estimate BAC as well as alcohol impairment, the results are not conclusive.

IEP cues for severe impairment seem extreme. Examples include A) social interaction that is uncontrolled (e.g. urinating), hostile (e.g. cursing), withdrawn (e.g. reclusive), or confused (e.g. loss of memory); B) physical appearance that is sloppy (e.g. slovenly); and, C) motor coordination that is stumbling (e.g. weaves or falls) or fumbling (e.g. shaky).

IEP cues seem to improve the likelihood that the moderately impaired person will be identified. However, the use of IEP cues (and, presumably, responsible beverage service practices) does not ensure the identification of the moderately impaired patron. Some patrons who are chemically impaired (based on BAC) may be difficult to detect ... presumably due to an acquired tolerance to alcohol or learned behavior intended to avoid detection as visibly or obviously intoxicated.

One study reports 32 cues that were observed while assessing the reliability of IEPs including speaking very loudly, unusual or expanded gestures, and flushed or red-faced. It may be helpful to compare a list of cues with case-specific facts or testimony.

Tolerance to alcohol

One of the few clinical studies regarding tolerance at high BACs was reported in the Journal of Forensic Science. A summary follows.

110 consecutive alcoholics who voluntarily entered a detoxification center were studied to determine their ability to perform certain designated functions (a) while under the influence of alcohol at admission and (b) four days later, after they had undergone detoxification. The findings indicate that alcoholics develop an increased tolerance to alcohol at BACs that are extremely high including levels generally considered potentially fatal.

Witness testimony

The deposition testimony of witnesses often seems to provide information favorable to the defense; and, at trial, deposition testimony is often the defendant's best "home

base". For both plaintiff and defendant, the approach to taking the deposition of witnesses is very important!

Examination of an alcohol expert:

Case-decisions regarding deposition, voir dire, and cross-examination at trial

Case-evaluation and case-strategy are two important considerations when an attorney is deciding if-when-how to examine an adversarial expert. When considering these and other case-specific options, counsel will usually benefit from a discussion with an experienced liquor liability expert.

Expert deposition: Should you depose the expert?

There are at least three good reasons to consider deposing an expert:

- You know little or nothing about the expert's approach to case-analysis and his/her ability to defend the approach taken, case-assumptions, case-calculations including BAC and TAC, and relevant scientific studies.
- You want to establish the nature, scope, and limits of the expert's case-analysis as presented in a written report and/or you want to "marry" the expert to a flaw in the case-analysis or written report.
- You want to settle the case and hope to indirectly affect the negotiations by diminishing the perceived impact of the expert's testimony.

When should the expert be deposed? As a general rule, as late as possible ... after you have obtained a detailed report or exhausted all related attempts to define the expert's opinions and/or anticipate the expert's testimony as well as the expert's reaction to cross-examination.

Voir dire: An opportunity often lost

A voir dire is an under-utilized technique. While you might be hesitant to disclose your approach to cross-examination at a pre-trial deposition, you should be much less concerned when conducting a voir dire.

<i>What's in his file?</i>	<i>What's not there?</i>
<i>What has he done?</i>	<i>What has he charged?</i>
<i>What does he know?</i>	<i>How does he react?</i>

A well-devised voir dire can be much more than a discovery deposition. The expert is usually not able to effectively rehabilitate his/her approach to case-analysis: *"Isn't it true that when I questioned you about 20 minutes ago, you were not able to ... ?"*

Cross-examination: Knowing and controlling ...

The effectiveness of your examination is based in large part on your preparation, your anticipation of the content of expert's testimony, the expert's usual behavior, your confidence, the use of control techniques, and a goal of

providing the members of the jury with both information and explanation.

Are you strategic?

Does your cross-examination of the expert reflect a consistent case-strategy that includes ways to effectively present information about the witness's ... ?

Qualifications

Knowledge of case-specific facts

Focus (i.e. what he did and did not do)

Implicit and explicit assumptions

Disregard for case-relevant factors

Gaps in testimony re relevant issues

Accuracy when describing the case analysis

Do you visualize a cross-examination that is organized, understandable, easy to follow, relevant, to the point, interesting-informative-illustrative, and persuasive?

Are you able to control the expert?

Are you familiar with the scientific literature, the expert's implicit or unspoken assumptions, and the expert's usual appearance-behavior-demeanor ... such that you can confidently and effectively use techniques to control the expert? Are you able to effectively use different types of questions to control both the flow of the examination and the expert's response to the particular question?

Isn't it true that ...

Are you able to ...

Are you familiar with ...

Why didn't you tell the members of the jury ...

Have you ever published anything in ...

Did you ...

You must be able to follow-up!

Isn't that because ...

Would you agree with a statement that ...

Let's review ...

Do you practice and test your trial skills?

Think through example outlines of case-specific questions-and-answers, your reaction to potential adverse answers, techniques you can use to maintain or regain control of the witness and/or focus on your strategic "home-base", follow-up questions and/or case-illustrations, and checklists used to ensure that you have provided the jury with necessary information.

Have you spoken with an experienced expert?

Have you ever asked an expert to assume the role of the *other* expert ... agreeing to a summary of anticipated testimony and then conducting a telephonic cross-examination?

Elements Key to an Effective Cross-examination

Preparation – Anticipation – Knowledge - Control

Case exhibits for mediation or trial

Well prepared exhibits can focus attention on allegations, relevant case law, case-specific questions, the state of the evidence, implicit or explicit assumptions relied on by an expert witness, reasonable alternative explanations, and case analyses! *It has been said that well prepared case exhibits resemble very effective story-boards.*

Case exhibits should be consistent with the case evidence, related legal issues, and analysis of the adversary's allegations and/or reliance on case assumptions-analyses-and-predictions, as well as your written and oral argument. Common aspects include the following:

Orientation - Allegation - Evidence

Assumption - Analysis – Prediction

Focus on Reasonable Alternatives

Expert review and preparation for testimony

Most experienced experts recommend the following approach to case review and testimony:

- Review should be started earlier rather than later; and the expert should be consulted prior to deposing individuals regarding alcohol-related or drug-related issues.
- The expert should review all of the relevant case materials including entire transcripts of deposition testimony and deposition exhibits.
- You should usually prefer to disclose experts or their anticipated testimony or expert reports after disclosure by your adversary.
- Decisions regarding the need for, approach to, and timing of depositions of adversarial experts are generally under appreciated.
- The cornerstones of expert trial testimony include introduction, orientation to the case, qualifications, case materials, relevant background, case analyses, and defensible opinions.

... And special attention should be paid to the anticipation of likely cross-examination!
- Trial exhibits relating to the time-course of alcohol consumption or the rise-and-fall of BAC curves or the estimation of BACs at specific times should be presented as templates ... to be completed by the expert.

Special Assignment: Case Consultation

Case Consultation: Even without testimony, an experienced liquor liability expert can assist legal counsel. Consider the following example case-assignments:

Evaluation of potential expert testimony and anticipation of cross-examination with special emphasis on at least six case-specific issues:

Alcohol Concentration Test Results

Total Alcohol Consumption

BAC at the Time of Last Service

Reported Appearance-Behavior-Demeanor

Expected Effects Based on BAC

Witness Testimony

Review of the experience and record of an adversarial expert and evaluation-discussion of options including deposition, voir dire, and cross-examination.

Initial telephonic consultation: An attorney should engage a potential expert in an initial telephonic consultation prior to hiring the expert. Some of the example topics might include the following:

Determination of an absence of conflict and agreement that the phone consultation is done without charge or obligation or restriction

Case-related features or hypotheticals

The alleged intoxicated person

The time-line for the consumption of alcohol and food, the time of last service, and the time of the post-service accident

Relevant clinical/medical treatments such as the administration of intravenous fluids

The alcohol test specimen(s) and test result(s)

Witness statements and/or testimony

A discussion based on relevant features such as those noted above

The reliability of the alcohol test result(s)

The total amount of alcohol consumed

BAC at the time of the last service of alcohol

The expected alcohol-related effects

A consideration of subject-specific features

A detailed discussion of the expert's prior experience and testimonial record in similar cases

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Dr. Brian Pape is the principal consultant with Pape & Associates, specializing in toxicology and related sciences. His professional experience includes the following:

- Associate Professor of Pathology (*Clinical Appointment*), University of Massachusetts School of Medicine.
- Senior Associate Consultant for Mayo Clinic (Rochester, MN) and Director of Toxicology at New England Toxicology Services (Woburn, MA).
- Director of Toxicology and Associate Professor, Department of Pathology, University of Missouri School of Medicine.

Dr. Pape has published more than 50 research papers, abstracts, and professional articles relating to alcohol and drugs, pesticides and toxic chemicals, analytical chemistry, forensic science, and general toxicology. He authors the *Toxicology Reporter*.

He has served as a technical and expert consultant to business, labor, and governmental agencies. He has been qualified as an expert in toxicology and related sciences in State and Federal Courts.

Dr. Pape has been board-certified by the American College of Forensic Examiners (BCFE) and the American Board of Forensic Medicine (BCFM).

He has been qualified on more than 100 occasions in State and Federal Courts. His case testimony has included liquor liability, alcohol and drug related testing-effects-and-accidents, laboratory testing, toxic torts, and product liability.
