County of Santa Clara
Office of the District Attorney

24-3297

DATE: February 6, 2024 (Item No. 67)

TO: Board of Supervisors

FROM: Jeffrey Rosen, District Attorney

SUBJECT: Crime Laboratory Study of Blood Alcohol Storage Conditions

RECOMMENDED ACTION

Approve an exception to Board Policy 3.44, Use of County Facilities, to facilitate the conduct of the Blood Alcohol Storage Conditions Study.

FISCAL IMPLICATIONS

There is no impact on the General Fund as a result of the recommended action. Costs associated with the study will be borne by the District Attorney's Crime Laboratory (Crime Laboratory) from already-budgeted funds and by the University of California, Davis Forensic Science Graduate Program, which will partner with the Crime Lab on the study.

REASONS FOR RECOMMENDATION AND BACKGROUND

The Board's approval of an exception to Board Policy 3.44, which prohibits the use of alcohol in County facilities, is sought to allow the monitored consumption of alcohol at the Crime Laboratory as part of the study. The study will be conducted by the Toxicology Unit of the Crime Laboratory and is being conducted to assess the accuracy of Blood Alcohol Concentration (BAC) analysis in cases where blood alcohol samples have been stored after initial collection from individuals arrested on suspicion of Driving Under the Influence (DUI). The study is intended to measure BAC immediately after the blood is drawn, and to measure it after a period when it is maintained in storage.

Many blood samples taken following an arrest for DUI are submitted to the Crime Laboratory through the Accident Investigation Bureau (AIB) secure drop-box located at the Sheriff's Office. Some of these samples remain at room temperature for up to five days before being logged in to the Crime Laboratory's chain of custody and refrigerated prior to testing. Refrigeration is crucial for preserving volatile components in blood, as they are sensitive to evaporation and/or degradation at room temperature. The purpose of the study is to determine if samples left at room temperature, like those at the AIB, undergo alcohol loss compared to control samples tested immediately after the blood is drawn.

A comprehensive and specific investigation into the integrity of blood samples, especially those used for blood alcohol analysis, is imperative to ensure BAC measurements are

accurate and representative of BAC at the time of the blood draw, thereby enhancing the reliability of the analysis in court. The results of this study will be presented in a University of California, Davis Master's thesis by a current employee of the Crime Laboratory. There is also strong interest in publishing the findings of this work in a peer reviewed journal to provide valuable insights and reference to the entire forensic toxicology community. A no-cost agreement between the County and the University will be executed to outline the terms of the collaboration for the study.

The study will recruit 10-15 research subjects to consume alcoholic beverages with the aim of achieving a target BAC in the range of 0.08-0.1 grams per 100 milliliters (0.08 is the legal limit for intoxication in California DUI law). These subjects will provide three blood samples, drawn by a licensed phlebotomist at the Crime Laboratory Training Room. One sample from each subject will be promptly analyzed within 1-2 hours of collection. The second sample from each subject will be placed in a labeled container within the AIB drop box for a duration of five days before being analyzed. The third sample will be refrigerated soon after collection and analyzed alongside the room-temperature samples. By comparing the BACs of each subject across different temperature conditions, the study aims to shed light on the accuracy of BAC analysis in varied storage environments.

The study protocol adheres to stringent guidelines, ensuring that research subjects remain anonymous and are fully informed of their rights as volunteers. Designated non-drinking chaperones will be present on the day of the study to guarantee the safety of each research subject and monitor their well-being throughout. The research study falls under the classification of "minimal risk" for the research subjects involved, according to the standards established by the University of California Institutional Review Board for studies involving human subjects. All sample analysis and other study-related activities will take place outside of standard working hours and without any interference with casework duties.

CHILD IMPACT

The recommended action will have no/neutral impact on children and youth.

SENIOR IMPACT

The recommended action will have no/neutral impact on seniors.

SUSTAINABILITY IMPLICATIONS

The recommended action will have no/neutral sustainability implications.

CONSEQUENCES OF NEGATIVE ACTION

The Crime Laboratory will be unable to conduct this study of the effect of different storage conditions on the analysis of blood alcohol content, and will therefore be unable to analyze whether its current processes produce the most accurate testing results for the purpose of criminal proceedings.

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