

The Colorado Bureau of Investigation's (CBI) Blood Alcohol Analyses—Summary of Issues

On December 7, 2015, while the CBI was conducting standard quality checks, an unexplained variability of results in blood alcohol casework was observed by the Toxicology Program Manager. Because of this anomaly, the CBI suspended its blood alcohol testing to determine the reason for the variability.

On December 14, 2015 and December 21, 2015, the Colorado Department of Public Health and Environment (CDPHE) was notified by two private laboratories, ChemaTox and the Rocky Mountain Instrumental Laboratories, regarding the variability of results in samples previously analyzed by the CBI and the lack of complete labeling on some of the blood vials received at the private laboratories.

Because of the anomalies discovered in December 2015, the CDPHE began a review of a component of the CBI's toxicology program. The CDPHE's final report, which was made public on February 16, 2016, identified three specific issues that are described below. All three have been addressed by the CBI.

The first issue was confined to the processing work of a single scientist, Forensic Scientist A. The Program Manager observed Forensic Scientist A and noticed there was a delay in the capping of sample vials. Because of this delay, evaporation occurred that erroneously lowered the result of the alcohol content. A review of the CBI's toxicology standard operating procedure (SOP) showed there was a lack of specificity in those SOPs as to the sequencing of the testing process. The procedure was immediately revised and all forensic scientists in the system were instructed on the corrected process.

All of Forensic Scientist A's casework that had been conducted since the inception of the CBI's toxicology program on July 1, 2015, was reworked. Of the 123 cases reworked, 56 cases were affected by the process described above. It is important to note that in all of these 56 cases, the CBI initially reported lower blood alcohol content than the blood alcohol content identified when the cases were reanalyzed; as a result, no defendants were charged based on an erroneously high blood alcohol content.

In order to solidify our confidence in the root cause of the anomalies, 10 of the 56 cases were outsourced to a third party laboratory as well as 78 cases from the remaining forensic scientists in the toxicology program. All results were confirmed and fell into the acceptable range of detectability.

A second issue brought to the CBI's attention was that arresting officers were not always labeling the blood tube with the subject's name as required by CDPHE standards. The CBI has now included instructions in the blood alcohol collection kits to ensure law enforcement personnel place the subject's name on the blood tubes. It should be noted that all kits returned to the CBI by law enforcement included the subject's name written on the blood tube or on a form contained within the sealed packaging specific to that subject. When the CBI receives kits, personnel place barcodes on the blood tubes and track all items of evidence throughout the forensic process until the evidence is returned to the submitting agency. This process ensures the chain of custody is intact.

The third issue identified was the need for the CBI to implement more specific protocols for reporting multiple test results on a single sample that varied by more than 10%. All necessary protocols have been appropriately revised to ensure specific reporting in these situations.

The CBI has implemented a number of actions to prevent these types of issues in the future. Specifically, the CBI has augmented its procedures, provided additional training to scientists, and increased the number of tests verified through the CBI's Quality Assurance program. Further, the CBI

has reanalyzed existing cases to ensure accuracy in reporting, improved instructions for the evidence collection process, and coordinated with impacted jurisdictions, prosecutors, and the Colorado State Public Defender through updates and amended reports.