

AN EVALUATION OF COLLECTIVE DEVICES IN HIGH-VOLUME DNA DATABASING

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In the United States, all fifty states have legislation to collect DNA samples from felony convicted offenders. In addition, there are currently thirty states that have legislation in place allowing for the collection of DNA samples from arrestees of certain criminal offences. For most states, the passing of arrestee legislation significantly increases the number of samples that a Databasing Unit is tasked with accessioning, testing, analyzing and reviewing prior to CODIS entry. As legislation continues to expand, driving more collections and processing, databasing units are facing the challenge of keeping up with the demand.

Bode Cellmark Forensics has been processing Databasing samples for local, state, and federal agencies for over 20 years. Over this time, Bode Cellmark has worked on over thirty separate projects that have resulted in completing nearly two million databasing samples. This project evaluated the impact of the collection device/substrate on laboratory throughput and efficiency, first pass success rates, and overall failure rates. Laboratory efficiency has a direct impact on cost, laboratory capacity, turnaround time and ability to avoid backlogs. The overall failure rate also impacts cost as it can lead to an offender profile not being entered into the database and additional time and effort to locate the offender for re-collection.

Bode Cellmark has processed databasing samples collected on nearly every available collection device during its twenty year history. This presentation will compare first pass success rates and overall failures between cotton swabs, treated card devices, and untreated devices such as the Bode Buccal DNA Collector on real field collected samples. In addition, data comparing laboratory efficiency by substrate will be presented. This will include a comparison of the sampling and testing workflows and the approximate labor hours required for each along with an estimate of daily throughput.