

Direct to DNA: A forensic casework approach

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The Ohio Bureau of Criminal Investigation (BCI) confronted a state-wide Sexual Assault Kit (SAK) testing initiative to eliminate the backlog of untested kits. As part of this initiative, over 13,000 kits were submitted. In order to process these kits in-house, BCI developed a tiered approach that enabled scientists to complete processing in a five year timespan. A fork lift approach was used with all testing performed internally with minimal screening. Data generated from the SAK Initiative was analyzed in a study by BCI and the Center for the Future of Forensic Science at Bowling Green State University to determine variables that increase the probability of obtaining a CODIS eligible profile*. This study was used in the development of a direct to DNA testing approach that could be applied to current casework to enhance the quality and potentially reduce the turnaround time. To monitor progress as the direct to DNA workflow was implemented, BCI collected data such as the average number of samples worked per case assignment at the London and Richfield Ohio laboratories and weekly turnaround times.

This new approach is in-line with a national trend as well as recommendations by NIJ and SWGDAM that involves less body fluid testing and more DNA samples being processed due to the increased sensitivity of DNA testing procedures. As a result of the new approach, the number of samples being worked from sexual assault cases has increased while the amount of time spent screening for bodily fluids has decreased. Casework turnaround times of approximately 25 days have continued to be maintained; however, increased submissions are expected with the seasonal increase in crime. Challenges that continue to be addressed include sample selection in caregiver cases, what are the optimal samples to run in a first round of testing, to what extent should the case synopsis guide testing, and when is testing done. Summary of the successes and challenges for direct to DNA implementation by the Ohio BCI will be presented.

*Kerka et. al. (2017) Statistical Modeling of the Case Information from the Ohio Attorney General's Sexual Assault Kit Testing Initiative. *J. Forensic Sciences* doi: 10.1111/1556-4029.13697