

TOUCH DNA FROM PROPERTY CRIMES – CODIS SUCCESS STORIES

Nikia Redmond, MS, Mary Thompson, MS, F-ABC, Katherine Welch, MS, F-ABC, Roger Kahn, PhD, F-ABC

Harris County Institute of Forensic Sciences, 1885 Old Spanish Trail, Houston, TX 77054

The majority of evidence submitted to crime laboratories from property crimes is in the form of blood or saliva evidence obtained from a crime scene. For example, blood might be found on broken glass at the point of entry of a burglary or a discarded cigarette butt might be found in the burglarized home of non-smokers. However, perpetrators do not always leave these types of samples at the scene. Instead, the perpetrator may leave DNA only in the form of touch DNA. Analysis of touch DNA evidence items from property crimes can increase the number of CODIS entries and the success rate of potentially solvable crimes. In this study we review the effectiveness of obtaining CODIS eligible samples from various sources of touch DNA recovered from property crimes.

Touch DNA can be obtained from objects handled by a perpetrator at a scene. In addition, personal items left behind at the scene may prove to be effective sources of touch DNA. The surfaces of clothing and items such as hats, masks, and gloves left at crime scenes may be analyzed in an effort to capture the DNA profile of the wearer. Items such as watches, screwdrivers, knives, and flashlights may be thoroughly swabbed in the areas most likely to be handled by the user. These types of evidence samples usually contain small amounts of DNA and should be processed to capture the maximum DNA yield, but all of these items can result in DNA profiles suitable for comparison and for CODIS entry.

Since its inception, the Harris County Institute of Forensic Sciences (HCIFS) Forensic Genetics Laboratory has tested evidence from property crime cases on a limited basis. In 2007, the laboratory launched an outreach initiative to educate law enforcement agencies regarding the collection and submission of DNA in property crimes. DNA profiles from both touched objects and from evidence items with body fluid stains have been uploaded into CODIS from property crime evidence. Four thousand eight hundred and ninety-three DNA property crime cases were analyzed and reported at the HCIFS from January 2008 through June 2011. Of these, 3,478 (71%) produced interpretable DNA profiles, 64% of which were eligible for CODIS entry. One thousand one hundred and thirty-two (33%) of the property crime cases reported were touch DNA cases while the remaining 2,346 (67%) contained blood or evidence associated with saliva. Touch DNA cases yielded CODIS-eligible profiles 34% of the time while body-fluid containing cases yielded CODIS-eligible DNA profiles 78% of the time. While the touch DNA success rate was less than the rate for items containing body-fluids, the CODIS hit rate for cases entered during this period was similar.

A sub-set of 1,398 (82%) touch cases reported during this time were evaluated for information regarding the evidence item from which touch DNA was collected. The evidence items were grouped into the following categories: tools left at scene; wires and cables; doors, knobs and windows; clothing left at scene; other personal items left at scene; objects at scene touched;

vehicle steering wheels and gear shifts; and vehicle center consoles, glove compartments and other surfaces. The results were used to calculate an observed success rate of CODIS entry for each of the categories.

This poster presentation will illustrate the success rate of property crime cases both in producing CODIS eligible profiles and in the number of CODIS hits obtained. This demonstration will also provide the success of different touch evidence types collected at property crime scenes and CODIS hits so that the viewer will better understand the utility of touch DNA to solve crimes.