

## **FORENSIC DNA COLLECTION AT DEATH SCENES**

Christy Smejkal, MS, F-ABC; Zury Phillips, MS, F-ABC; Rhonda Williams, PhD, F-ABC; Roger Kahn, PhD, F-ABC, Harris County Institute of Forensic Sciences

After attending this presentation, attendees will have a better understanding of the operations of a team of forensic DNA analysts called to select death scenes to collect trace DNA evidence. Attendees will learn the importance of collecting and preserving trace evidence from decedents at death scenes and the impact such evidence has in providing valuable investigative information. Case examples will be presented to outline successes from recovering foreign DNA from decedents.

The Trace DNA Evidence Collection Team at the Harris County Institute of Forensic Sciences (HCIFS) is a group of qualified DNA analysts that responds to death scenes for the purpose of collecting Trace and DNA evidence from decedent's bodies prior to transport to the morgue. Team members from the Forensic Genetics laboratory provide on-call coverage 24/7. They respond to homicides where close contact is suspected to have occurred between the perpetrator and victim. Evidence such as hairs, fibers, body fluids and potential areas of touch DNA are collected from the body at the scene to prevent possible loss during transport to the morgue.

A guide is provided to HCIFS medicolegal death investigators to aid them in determining whether to dispatch a Trace DNA Evidence Collection Team member to collect evidence at a scene. Evidence of close contact between the decedent and a perpetrator such as signs of a struggle, blunt force trauma, or possible evidence of sexual assault as well as cases where the body has been transferred or dumped will lead to a call-out. The Trace Team would not be called to collect from highly decomposed or skeletonized bodies or bodies submerged in water. If the scenario suggests evidence may be present but it is not likely to be lost during transport of the body, the decedent may be sealed in a body bag for trace evidence collection at the morgue just prior to autopsy. This might be the case, for example, for a body that is dry or has minimal blood on it.

We have noted a surprising number of positive DNA results from victims of gunshot wounds. DNA foreign to the victim has been found in at least 20 gunshot wound cases from the decedent's pockets that were turned inside out and on facial bruises. The turned out pockets and bruises indicate close contact, so these cases meet our call-out policy despite use of a firearm.

Between 2009 and 2013 the team responded to 345 scenes. Forty six of the cases yielded DNA foreign to the decedent. 31% of the 46 cases yielded 1-10 foreign DNA alleles, 69% yielded more than ten alleles. In 18 of the cases (35%), the DNA was found to be consistent with a known suspect named in the case. In addition, two DNA profiles obtained from evidence collected by the Trace Team resulted in CODIS hits. Both CODIS hits involved unclothed female decedents found outside. In the first case, a pair of handcuffs used to bind the decedent was swabbed and the resulting profile hit to a suspect in CODIS. For the second case, a stain on the decedent's calf was swabbed and the resulting profile developed a suspect in CODIS which ultimately led to a confession by the individual.

The Trace DNA Evidence Collection Team is one of the only organized teams associated with a Medical Examiner's Office that regularly collects evidence from decedents at death scenes. This team has become an integral part of the HCIFS medical examiner service. We hope the

unexpectedly high success rate of recovering foreign DNA from decedents will encourage others to do this.

Keywords: Touch DNA, evidence collection, death scenes, death investigation.