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## **VALUE OF DNA DATABASE IN CRIMINAL INVESTIGATION: US AND UK EXPERIENCE**

DNA evidence is now widely accepted as a standard forensic technique for the investigation and detection of a wide spectrum of crime types from volume crime (burglary and automobile crime) to serious and major crime such as rape and murder. The DNA database helps police to link offenders to crime scenes by matching DNA profiles that have been stored in the national database to DNA samples taken from crime scenes or suspects. It can also be used to eliminate suspects from enquiries. [2, c. 28]

The United Kingdom has been at the forefront of developments in DNA profiling and has the most enabling legislation in the world for the taking, retention and use of DNA samples. It had the first DNA database for use in criminal investigations and still has, proportionately, per head of population, the largest in the world. [3, c. 309]

The UK National DNA database (NDNAD) operates by analysis of buccal (mouth) scrapes or hair roots taken from any individual arrested for any criminal offence. These are known as criminal justice samples (CJ). DNA material collected at a crime scene is processed to produce a DNA profile, which is loaded onto the NDNADB. If the loaded profile matches that of a named individual already on the NDNADB (known as a DNA “match”), then that information is passed back to the police force who submitted the crime scene DNA material. This usually leads to the arrest of the individual (who would be considered a suspect for the crime) and a police interview follows in which the suspect is expected to account for how their DNA came to be at the crime scene. If the police do not accept the explanation offered or if the suspect confesses to the crime, then the suspect will be charged with the offence and that DNA “match” counted as a detection. [1, c.128]

The Combined DNA Index System, or CODIS, (the FBI’s DNA database) blends forensic science and computer technology into a tool for linking violent crimes. It enables federal, state, and local forensic laboratories to exchange and compare DNA profiles electronically, thereby

linking serial violent crimes to each other and to known offenders. Using the National DNA Index System of CODIS, also helps to identify missing and unidentified individuals. [2]

When specifically looking at the advancement of DNA testing, its “impact...on the legal system cannot be overstated; it is one of the more transformative developments that have taken place in recent legal history” [4, c.88]

This impact can be seen in DNA’s power to determine the legal outcome of criminal case by “providing certainty about identity in a way that has not been possible before”, and establishing the innocence or guilt of an individual suspected of a criminal act. [4, c.87]

DNA analysis can also be useful in solving cold cases (unsolved cases from the past). One of the most famous examples is the Kathy Whorton case. Kathy Whorton was the victim who was found dumped in Ouachita Parish in 1980. A male pubic hair and semen were recovered from the victim's panties and clothing, but at the time the only scientific method of identification was blood typing. The examination of this evidence led investigators to believe that they were looking for a black male suspect. Shortly after Whorton's murder, infamous serial killers Henry Lee Lucas and Otis Elwood Toole confessed to hundreds of similar rapes and murders across the United States. The only problem was the fact that both Lucas and Toole were white. But based on their confessions, the Kathy Whorton case was closed. Kathy Whorton's sister, Debbie Whorton Wilson, had been trying to get the case re-opened for years, always believing that her sister's murderer was still on the loose.

The Whorton case was re-opened in October of 2003. There had been five or six original suspects at the time, and an anonymous 911 caller who originally reported finding the body. Over 20 years later, investigators identified and located the anonymous caller, as well as the other suspects. DNA was obtained from all of them and compared to the now-valuable crime scene evidence. There were no hits and no suspects. But there was one last hope, the FBI's Combined DNA Index System (CODIS). The DNA evidence from the Whorton case was submitted to CODIS, and the result was a positive match to career criminal Anthony Wilson. Wilson was already a convicted sex offender, but had no previous links to a murder case. Thanks to the DNA evidence, the police had conclusive proof of his guilt and on March 31, 2007 Anthony Wilson was arrested for the rape and murder of Kathy Whorton.

Therefore, DNA traces found at crime scenes and DNA records held in databases have already helped the police to solve numerous investigations into specific crimes. The police clearly benefit from the use

of forensic science at an operational level. The use of DNA databases has an important advantage for criminological research: it is possible to link offences committed by the same individual, whether the offender's identity is known or not. By making a one-on-one comparison of police data with the corresponding DNA data, not only can co-offenders be studied, but a larger network of offenders connected to each other can also be analysed, even if their identity is unknown to the police.

Based on the findings from this review we may come to conclusion that Forensic DNA databases constitute an important investigative resource in contemporary criminal justice systems of every state.

#### **Список використаних джерел**

- | 1. Офіційний   | сайт | ФБР | URL: |
|--|------|-----|------|
| <a href="https://www.fbi.gov/services/laboratory/biometric-analysis/codis">https://www.fbi.gov/services/laboratory/biometric-analysis/codis</a>  |      |     |      |
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#### **WHY DOES HEALTHCARE FOR PEOPLE WHO USE DRUGS IN UKRAINE CONTINUE TO FAIL?**

Recent geo-political events have thrust Ukraine onto the world stage in unprecedented ways. The increased attention to Ukraine's political and economic situation is long overdue, yet nevertheless tends to overlook one feature that has attracted international attention to Ukraine for more than a decade: its unusual HIV epidemic. Injection drug use and HIV are synergistic public health problems that remain poorly controlled in the region. In 2014, estimated HIV prevalence among adults aged 15-49 was 1.2% and more than 300,000 individuals in the country are currently living with HIV. Injection drug use was the primary driver of HIV transmission in Ukraine from the earliest recorded infections in the mid 1990s until the year 2008, when drug use was finally overtaken by heterosexual transmission as