



### A170 The Analysis of Sexual Assault Kit Backlogs: Scientific Results and Criminal Case Dispositions

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After attending this presentation, attendees will be familiar with the scientific results from the testing of backlogged sexual assault kits, the success in uploading DNA profiles into CODIS, and the criminal justice dispositions of a sample of backlogged cases vs. a sample of sexual assaults that were tested currently.

This presentation will impact the forensic science community by increasing awareness of a growing national problem and how the role and impact of forensic science in backlogged sexual assault kit cases is mediated by the relationship between the assailant and victim and associated demographic and investigative variables.

Backlogged and untested sexual assault kits (SAKs) are a major problem facing forensic crime laboratories and law enforcement agencies throughout the United States. The combined untested SAKs from the Los Angeles Sheriff's Department (LASD) and Los Angeles Police Department (LAPD) reached 10,895 cases in the fall of 2008. The chief executives of both agencies announced that all backlogged kits would be tested, using outside private DNA testing laboratories. The Sexual Assault Kit Backlog Project was funded by the National Institute of Justice (NIJ) to: (1) evaluate the results of scientific tests performed on outsourced backlogged sexual assault kits; (2) review the sexual assault case processing literature; (3) determine the criminal justice dispositions of backlogged and nonbacklogged cases before and after kit testing; and, (4) identify case and evidence characteristics useful in prioritizing sexual assault evidence submitted in the future.

Researchers from California State University, Los Angeles collected a 20% random sample (1,948 cases) of backlogged cases from the more than 10,000 tested cases in order to evaluate the scientific results. The study design also included a smaller subsample of 742 backlogged and nonbacklogged cases to determine final criminal justice dispositions, before and after testing. The research design also included a review of the sexual assault case processing literature and focus groups with sexual assault investigators, prosecuting attorneys, and criminalists to discuss the role SAK evidence plays in resolving both stranger and nonstranger sexual assaults.

Data from tested SAKs were drawn from crime laboratory files and revealed 93% of victims were female, two-thirds knew their assailants, almost half reported they were intoxicated with alcohol or drugs at the time of the assault, and more than three-quarters (77.3%) sustained one or more injuries. The average post coital interval between the time of the assault and victim exam was 23.3 hours, three-quarters reported vaginal penetration, and more than one-quarter thought the assailant had ejaculated.

Laboratory results included screening tests to find different biological markers (sperm, P30, Y chromosome, acid phosphatase, amylase, and epithelial cells) from various orifices and in dried secretions on the body. Semen screening tests and Y chromosome tests were successful 40% to 50% of the time on samples from the vaginal and external genitalia areas and varied widely on samples from other areas. Y chromosome tests were also successful about 50% of the time for dried secretions. STR analyses found male DNA in about 80% of attempts with samples from the vagina and two-thirds of samples from external genitalia and dried secretions. Full DNA profiles were determined in two-thirds of DNA samples taken from the vaginal area, but in a lesser percent from other body regions. Success in finding foreign DNA and achieving CODIS Uploads decreased as post coital interval (PCI) increased.

The crime labs were successful in uploading profiles to CODIS almost 60% of the time and in achieving offender "hits" in about 45% of inquiries and case to case hits in less than 3%. For the SAK backlog sample (n=371), no new arrests occurred after SAK testing occurred, but one filing and two convictions did. Almost 40% of these sampled cases had previously resulted in arrests and 18% convictions without the benefit of a SAK analysis. For the matched sample of 371 nonbacklogged cases, almost the same percentage of cases resulted in arrest, filing, and conviction prior to SAK testing. After the tests, however, a modest percent of new cases resulted in arrest (2%), filing (5%), and conviction (12%). Focus group participants felt that testing of kits should not be mandatory and that future kits testing must reflect investigator evaluation. Many cases in the backlog were those where identity was not an issue and the alleged crime was a question of consent. A system of priorities needs to be established to determine which cases (and which evidence within the kits) need to be tested and recognize that forensic resources are limited. DNA can contribute to both stranger and nonstranger cases, but the SAK and the case at hand require evaluation before testing. Also, although uploading DNA profiles into CODIS may also have value in the long term, many of the backlog "hits" that occur are those where the assailant's DNA profile has already been entered (upon his arrest or conviction) on the same case and is redundant. A priority scheme with scientific, investigator and prosecutor input should be devised and implemented.

#### **Sexual Assault Kits, Case Backlogs, Criminal Dispositions**