



E79 Rapid DNA Implementation—Experiences From an Accredited Laboratory

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Learning Overview: After attending this presentation, attendees will: (1) be introduced to Rapid DNA technology and data, (2) be provided with an overview of the standards governing the use of Rapid DNA, (3) learn the challenges of implementing Rapid DNA testing in an accredited DNA laboratory, and (4) learn the importance of setting recommendations for partnered law enforcement agencies to follow to maintain courtroom confidence in DNA testing technology.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by providing a blueprint as to how an International Organization for Standardization (ISO) 17025 accredited laboratory can adopt and assist law enforcement agencies to successfully implement rapid DNA technology. This presentation will focus on the importance of implementation recommendations that meet and/or exceed current Quality Assurance Standards to ensure the integrity of DNA testing, even in the hands of non-DNA experts.

Rapid DNA describes the fully automated hands-free process of developing a Combined DNA Index System (CODIS) Core Loci Short Tandem Repeat (STR) profile from a reference sample. Rapid DNA instruments are designed specifically for use by law enforcement in non-laboratory environments, such as booking stations. This “swab in—profile out” technique generates results in just 90 minutes, providing both DNA laboratories and law enforcement with immediate information to aid in investigative leads.

This presentation will delve into the changes that Bode Cellmark, as an ISO 17025 certified laboratory, made to accommodate rapid DNA into current casework workflows. This included the training of DNA analysts in both Rapid DNA instrumentation and modified Rapid DNA analysis methods. A brief overview of the internal validation will show attendees an example validation plan that meets both ISO/International Electrotechnical Commission (IEC) 17025 and the Federal Bureau of Investigation Quality Assurance Standards, including discussion of the new standards expected to be released in early 2019. This presentation will also demonstrate the hurdles of bringing a newly released technology on-line, sample type compatibility with the current Rapid DNA instruments, and a review of challenging type samples that will encompass discussion on the current limitations of Rapid DNA.

With the recent passage of the Rapid DNA Act in August 2017, a move toward expanding the ability of law enforcement to implement Rapid DNA analysis technology and profile upload into the federal database has begun. Commercially available Rapid DNA instruments have been targeted toward law enforcement agencies; however, policies for this new technology have yet to be instituted. Establishing best practices within the forensic community is crucial. State and local crime laboratories inevitably will face similar inquiries about Rapid DNA from the local law enforcement agencies. This presentation provides implementation recommendations for both DNA laboratories and law enforcement agencies regarding appropriate documentation of validation, training, and maintenance of instruments to meet accreditation standards.

Rapid DNA technology is a great advancement for the field of forensics, but the implementation must be a cooperative effort between law enforcement and crime laboratories to ensure that accurate, reliable, and reproducible data is produced and presented in a court of law.

Rapid DNA, Quality Assurance, Law Enforcement