E63 Navigating Toward a Blind Proficiency Testing and Verification Program

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After attending this presentation, attendees will understand the difference between blind testing and verification, know the challenges faced by quality assurance personnel when attempting to administer blind proficiency testing to laboratory staff, and be equipped with a variety of options for resolving problems that may accompany blind test preparation.

This presentation will impact the forensic science community by discussing the feasibility of successfully incorporating blind proficiency testing and verification into the quality assurance programs of crime laboratories, thereby suggesting ways to increase the confidence in overall laboratory performance.

Proficiency testing is a regular, planned activity of every accredited crime laboratory as a means to demonstrate the continued competence of personnel, as well as the effectiveness of analytical operations. While some laboratories developed proficiency testing programs that are more stringent than the minimum standards set forth by their accrediting bodies (e.g., testing frequency, number of personnel involved, and areas of operations tested), open proficiency testing is more common than blind proficiency testing. The absence of blind proficiency testing in the forensic field is not due to a lack of understanding its necessity; rather, it is because of the difficulty in implementing it successfully.

An open proficiency test, a practical test given to an analyst who is aware of being tested, carries several disadvantages. First, most test samples purchased through external providers are relatively easy to work, when compared to normal casework. This is partly due to the fact that laboratories have different protocols, and external test providers must utilize standard samples that can be successfully analyzed by personnel from different laboratories. Secondly, a test sample does not generally appear like a typical casework sample; therefore, laboratory personnel are likely to be focused on the fact that they are taking a test. Moreover, even though they are instructed to treat the test samples in the same manner as case samples, analysts are not always able to do so. Some analysts may be inclined to anticipate the results they believe they should obtain. This is contradictory to the intent of proficiency testing. In contrast, a blind proficiency test is a practical test taken by an examiner who is unaware that it is a test. Blind proficiency testing, when executed successfully, can offset most of the issues that arise with open proficiency testing.

Verification occurs when results and conclusions are confirmed as being acceptable by a second analyst prior to reporting. Blind verification can augment the robustness of a laboratory's proficiency testing program, as it is intended to determine if two analysts can independently arrive at the same conclusion without prior knowledge of each other's work. Both blind testing and blind verification remove the element of confirmation bias produced by the nature of the exam. Both techniques assess the uniformity of operations more thoroughly and, therefore, elevate the level of assuredness a laboratory can provide regarding the reliability of its personnel and operations.

In 2015, the Harris County Institute of Forensic Sciences (HCIFS) Quality Management Division developed and optimized a blind proficiency testing and verification program for the crime laboratory. Quality Management drew from several sources to ensure the effectiveness of each test, including purchased specimens from external providers, and collaborated with law enforcement personnel who regularly submit evidence and the laboratory's evidence receiving staff. The end result was the successful creation of custom-made, typically packaged evidence

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for each laboratory discipline that was able to be shuttled through the system as normal casework.

Not surprisingly, a different set of challenges emerged when this new program was launched. Concealing the planning efforts so the laboratory staff would remain uninformed proved to be the biggest challenge, both logistically and from an ethical standpoint. Ensuring the laboratory information management system would assist and not hinder the process also proved to be difficult. Additionally, decisions needed to be made regarding the disclosure of test results to management and test participants. These concerns and the various proposals raised to address them are discussed in this presentation.

Blind Proficiency, Verification, Quality Assurance

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