

The Implementation of a Blind Quality Control Program in a Forensic Laboratory

Callan Hundl, Maddisen Neuman, Alicia R. Rairden, Preshious Rearden and Peter R. Stout

Learning Overview: At the end of this presentation, the audience will learn how the Houston Forensic Science Center (HFSC) successfully implemented a blind quality control program, the benefits the program provides, the challenges faced when implementing and maintaining such a program, results of the cases submitted, and where HFSC plans to go in the future with this program.

Impact on the Forensic Science Community: This presentation will explain the difference between proficiency tests and blind quality control tests and their benefits to a forensic laboratory. The intent of the presentation is to describe to the attendees that a blind quality control program in a forensic laboratory is possible as well as encourage other laboratories to create a similar program of their own. Experiences, successes and failures, and tricks of the trade will be shared to benefit other laboratories and show that a blind quality control program is an asset to laboratories individually as well as to forensic science as a whole.

As required by accreditation standards, forensic science service providers must participate in proficiency tests. These proficiency tests are often purchased from an external vendor and open in nature which means the analyst is aware they are participating in a test. These tests often do not mimic normal casework in several ways such as paperwork, packaging, and evidence type. While proficiency tests are beneficial for monitoring a laboratory's performance compared to other laboratories, they lack in providing insight into how the laboratory's internal processes and procedures are faring. Blind quality control (QC) tests are intended to fill in the gaps that open proficiency tests leave behind. Blind QCs allow the laboratory to monitor the entire quality management system from submission of the evidence to the reporting of the results, and everything in between.

In 2015, HFSC adopted the recommendations by the American Society of Crime Laboratory Directors/ Laboratory Accreditation Board (ASCLD/LAB) in the 2009 National Academy of Sciences (NAS) report¹ for blind proficiency testing by implementing a blind quality control program. The program is facilitated by the Quality Division, which is organizationally separate from the laboratory sections. Blind QC cases are prepared to appear like routine casework and submitted into the normal workflow. The cases are not expected to receive any special treatment by analysts, thus reducing the risk of intentional or unintentional bias in the analytical process. The Toxicology, Seized Drugs, Firearms, Latent Prints (Processing and Comparison), Forensic Biology, and Multimedia (Digital and Audio/Video) sections participate in the blind QC program.

Between September 2015 and December 2018, 973 blind QC cases were submitted throughout the six sections that participate in the blind program. Of those, 901 cases were completed and only 51 were discovered by the analyst as being a blind QC case. All 901 cases were completed satisfactorily. HFSC discovered two areas for improvement during this time frame due to the results of blind tests. As sample sizes increase, the goal of the program is to use the data generated to make error rate determinations. HFSC also intends to further collaborate with other laboratories in the forensic science community to expand on the opportunities that the program can provide by sharing knowledge, data, and resources.