

Characterizing verification and blind proficiency testing at forensic laboratories

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Introduction

The 2014 Bureau of Justice survey of publicly funded forensic crime laboratories found:

- 97% of 409 public forensic labs reported a proficiency testing program but only 10% reported using blind tests (Burch et al, 2016).
- Local or state laboratories were far less likely to be conducting blind tests than federal laboratories.

Labs of a range of sizes have expressed interested in and identified obstacles to implementing blind proficiency testing (Mejia et al, 2021). Less is known about the use of blind verification in case work, though anecdotally it appears to be increasing. There is a need for more data on current practices.

Current Study: We piloted a procedure to identify and analyze Standard Operating Procedures (SOPs) from laboratories that publish SOPs on their websites to assess verification procedures for latent print comparison (LPA) and proficiency testing guidelines.

Method

Developing the instrument

- To create a standardized dataset from varying SOPs, we developed a coding form to capture: characteristics of a laboratory such as size and jurisdiction, characteristics of the laboratory's proficiency testing program, and characteristics of verification procedures for latent print comparison.
- Five researchers tested the instrument on approximately 9 cases (one was coded by all researchers) and met to discuss challenges and update the instrument. This identified a lack of conformity in laboratory SOPs, and the team identified core areas in which to search for data, including adding a quality manual to the list of SOPs.

The sample

- A list of laboratories that publish their SOPs on a public-facing website was provided to researchers by a colleague, and researchers reviewed one additional laboratory to expand the list. The final sample consisted of 22 U.S. laboratories: 5 city, 3 county, 12 state, and 2 federal.

Collecting and analyzing the data

- The final instrument was used by the teams' subject matter expert (Maddisen Neuman) to code all 22 labs in the sample.
- The frequency of laboratory policies requiring blind proficiency testing, as well as characteristics of the verification process were tabulated.

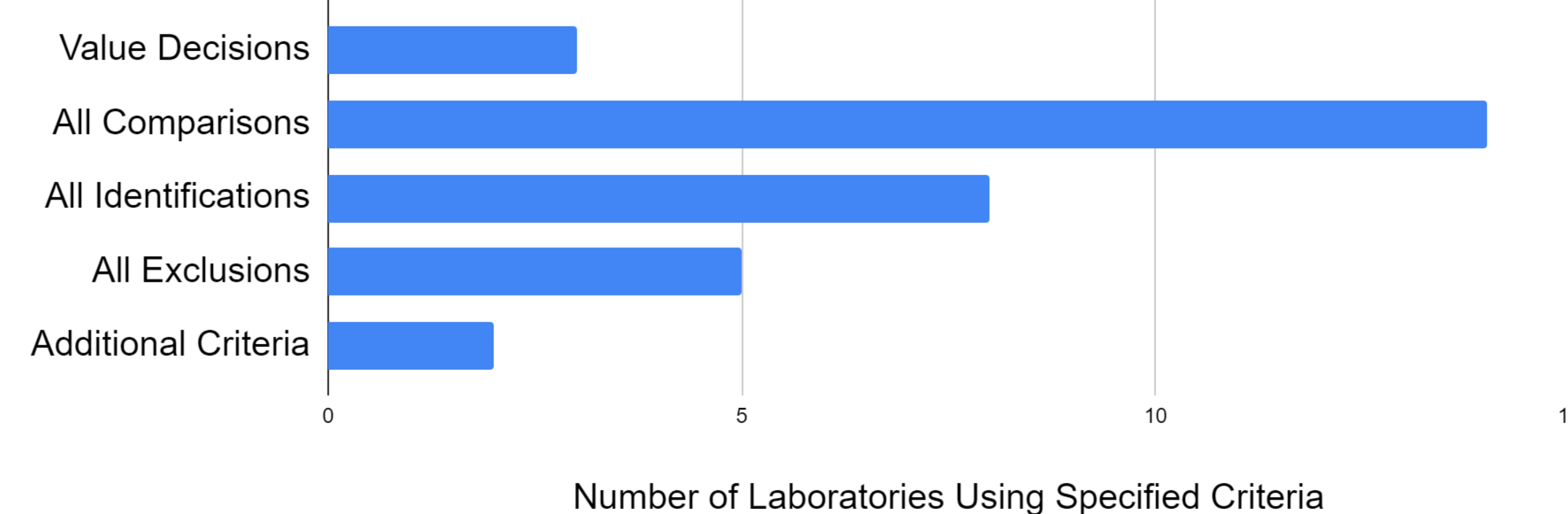
Acknowledgements

The researchers thank Sabrina Cillessen, Physical Evidence Program Manager of the Virginia Department of Forensic Science for discussion and assistance in locating laboratories that publish public-facing SOPs.

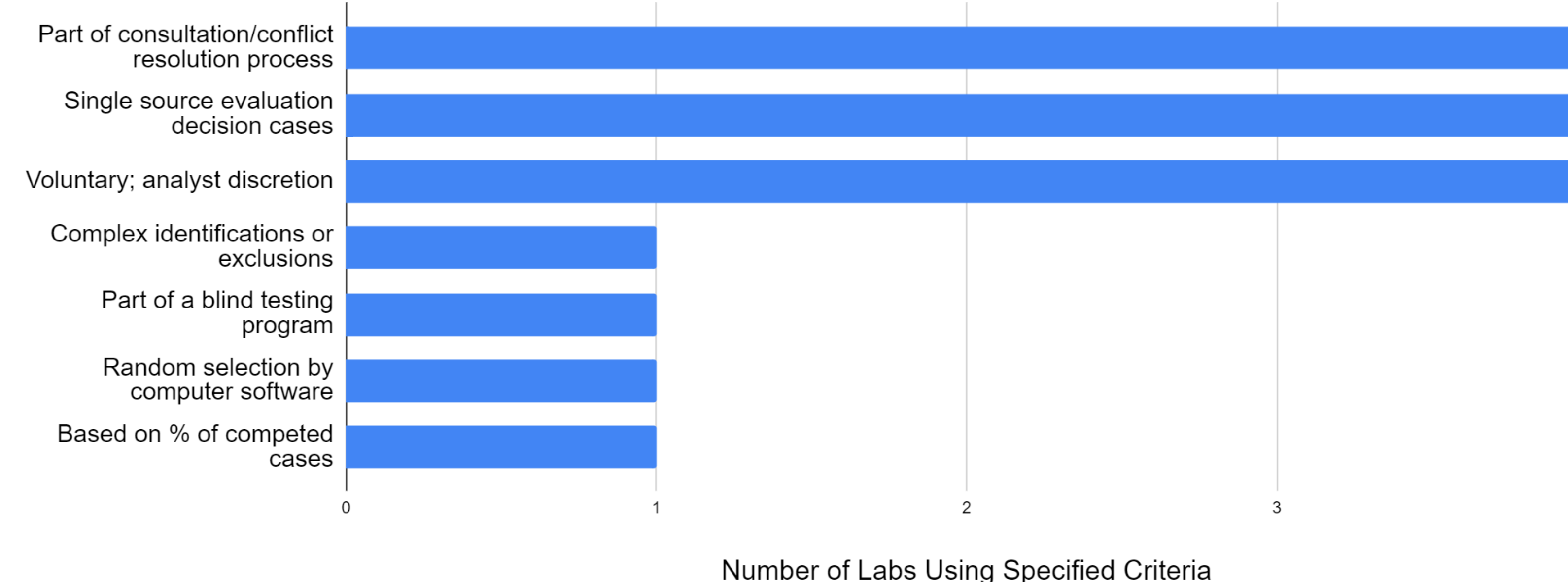
Results & Discussion

Two reviewed laboratories have some level of blind testing programs established, and one laboratory was defining a blind testing program in latent print analysis. All laboratories have latent print analysis programs with published verification procedures, albeit with varying criteria for which prints are verified. Ten labs use blind verification, again with varying criteria for when to conduct blind verification.

Verification Criteria Used by Laboratories



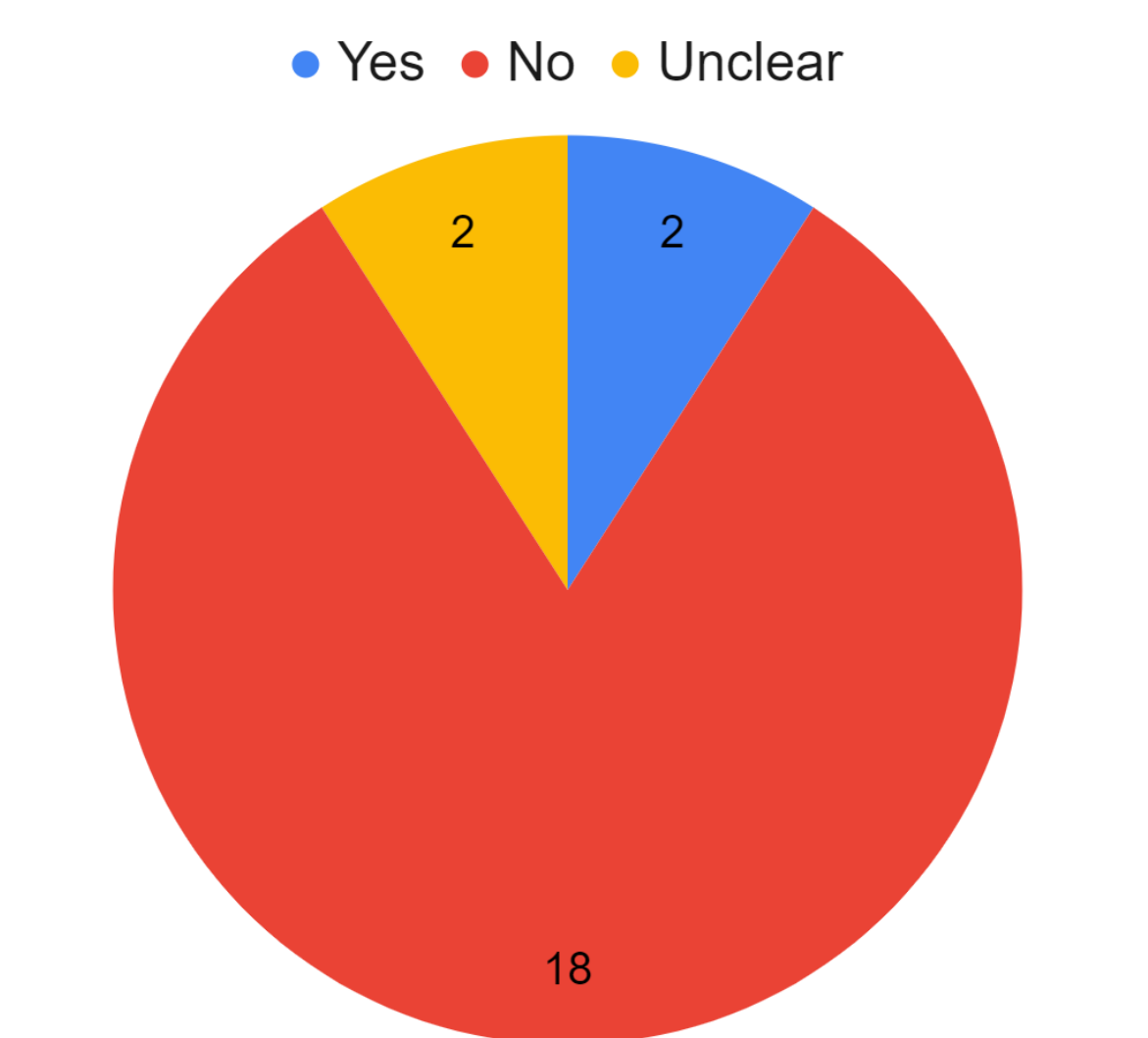
Blind Verification Criteria for the Ten Labs that Conduct Blind Verifications



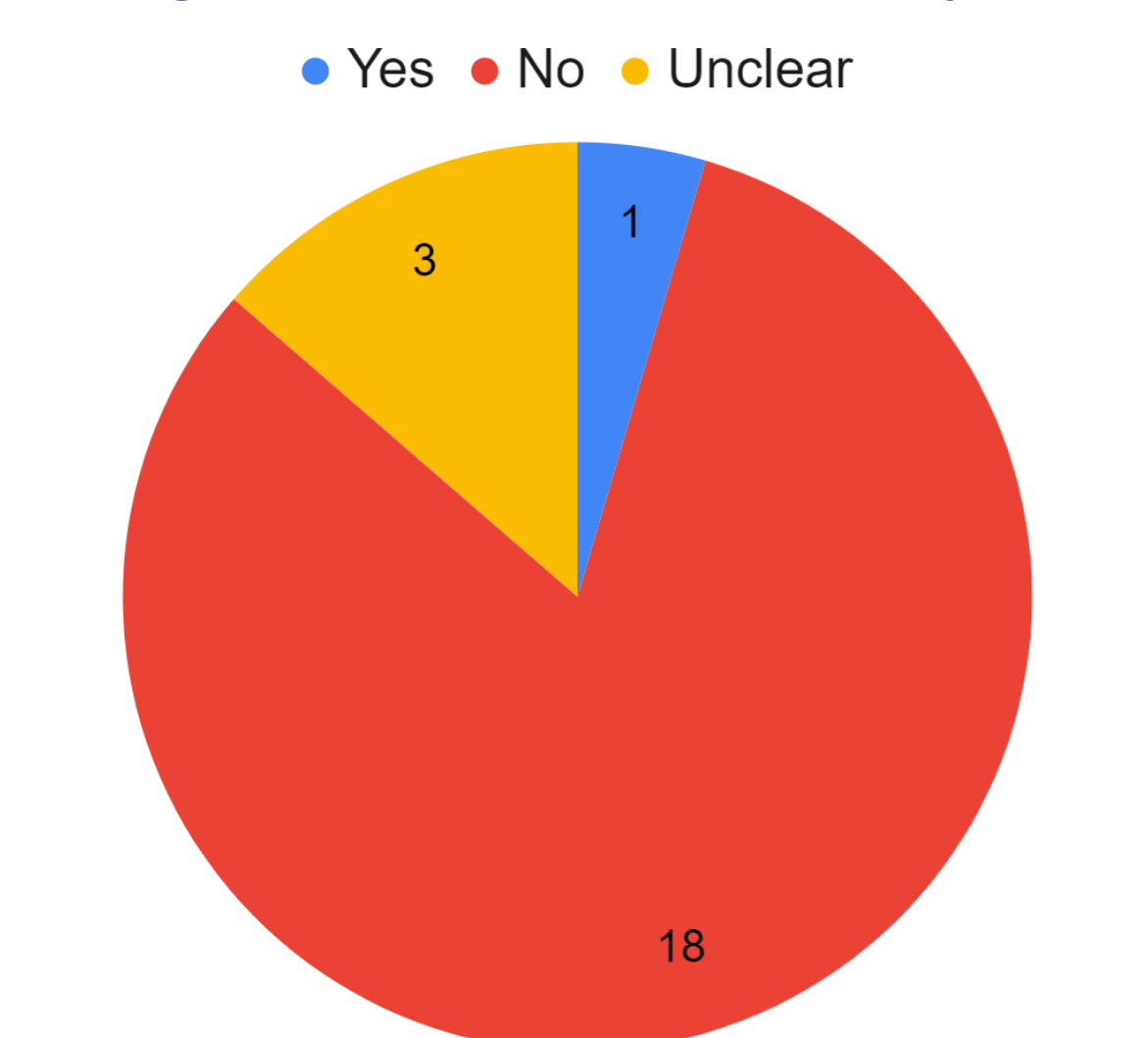
This pilot demonstrated the feasibility of using laboratory SOPs and quality manuals to characterize laboratory processes (protocols) related to proficiency testing and verification procedures. Challenges included that there is no standard format for SOPs, and some relevant information was found in quality manuals. The initial pilot in which all researchers conducted coding highlighted the importance of training of coders by a forensic quality assurance expert. While a full inter-rater reliability study was not conducted as part of the pilot, initial review did find variability, primarily that the QA expert was able to locate more information.

Laboratories that publish public-facing SOPs likely have robust QA programs. To better understand prevalence of procedures across a laboratories in the U.S., researchers could contact accredited laboratories directly to request SOPs and quality manuals for analysis. Laboratories that are piloting new processes may not have publicly available SOPs; to fully understand the prevalence of activities such as blind proficiency testing may require direct engagement with laboratories, such as through a survey.

Do Laboratories have Blind Testing Programs?



Do Laboratories have Blind Testing Programs in Latent Print Analysis?



Do Laboratories Perform Blind Verifications in Latent Print Analysis?

