

CHAPTER

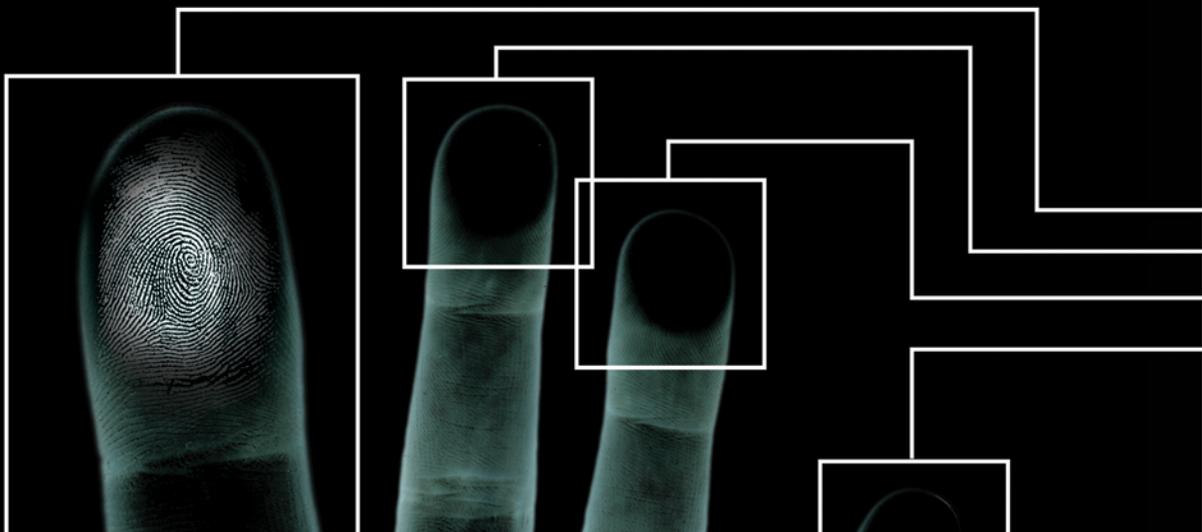


# QUALITY ASSURANCE

M. LEANNE GRAY

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## CHAPTER 12

# QUALITY ASSURANCE

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## 12.1 Introduction

The purpose of a quality assurance program is to ensure that all examiners meet the quality standards set by the discipline and by the individual laboratory. A quality assurance program includes “those planned and systematic actions necessary to provide sufficient confidence that a laboratory’s product or service will satisfy given requirements for quality” (ASCLD/LAB, 2005, p 66). A quality assurance program sets the guidelines for development and implementation of standards that address examiner qualifications, report writing, document control, quality control measures, procedural validation and documentation, organizational structure, infrastructure requirements, and evidence control.

There are two fundamental principles in friction ridge examination: (1) all latent print examiners must be trained and found to be competent to perform casework prior to beginning independent casework, and (2) all individualizations (i.e., identifications) must be verified by another competent and qualified examiner (SWGFAST, 2006, p 122).

The processing of evidence to develop and preserve latent prints can involve various processing techniques and preservation methods. Although no standard sequence can be applied to all items to be processed, standardized sequences within an agency should be established for particular circumstances (e.g., type of evidence, type of case). Friction ridge examination requires that an examiner analyze and determine the suitability of the ridge detail, compare the ridge detail with known exemplars, and evaluate the sufficiency of visual information to reach a conclusion. Possible conclusions are individualizations (identifications), exclusions, or inconclusives (SWGFAST, 2004, pp 358–359).

Quality issues that arise from inconsistencies, clerical or administrative errors, or erroneous conclusions may occur.

A quality assurance program will allow for the tracking of any of these quality issues. A quality assurance program will ensure that all examiners are following proper protocol in order to minimize the number of issues that are produced.

Because the forensic science community is constantly growing and changing, and, therefore, the rules governing quality assurance continue to change, this chapter will discuss generalities of a quality assurance program. For specific guidelines and the most up-to-date resources, please refer to the appendix of related references on quality assurance programs and accreditation and certification organizations, section 12.6.

## 12.2 Quality Assurance Program

### 12.2.1 Quality Assurance Documents

A quality assurance program should be written and contained in a set of documents or in a single document (e.g., quality manual). Included in the quality manual should be documentation for the following areas: processing techniques; preparation, use, and storage of chemicals; laboratory safety procedures; material safety data sheets; evidence handling procedures; proficiency testing; minimum notation requirements on examination worksheets; report wording guidelines; technical and administrative case reviews; training and competency records; equipment calibration and maintenance logs; validation records; policy and procedure manuals for electronic fingerprint systems; and testimony reviews (SWGFAST, 2006, pp 117–118).

A quality manual should also outline the responsibilities of personnel regarding adherence to the quality assurance program and delineate the procedures to follow when dealing with quality issues. In addition, documents may address such areas as minimum standards and controls, qualifications of a verifier, organization and management requirements, personnel requirements, and facility requirements.

### 12.2.2 Competency Testing

An agency must have a method to initially test for competency when an examiner first joins the agency or an examiner completes an internal training program. This initial competency testing may include oral, written, or practical tests. If an agency is large and has multiple worksites, any required tests should be consistent from one worksite

to another. This will ensure that each examiner's overall quality and minimum level of competency are consistent throughout the agency. No examiner should be allowed to begin independent casework until he or she has satisfied all aspects of the initial competency testing phase.

### 12.2.3 Evidence Handling and Quality Audits

Each agency must establish a policy for the handling of all evidence within its control. A chain of custody shall be maintained from the time that the evidence is collected or received until it is released. Procedures shall establish how evidence is collected, received, and stored. The procedures shall preserve the identity, integrity, condition, and security of the item. The policy should include information about how evidence is to be packaged, seal requirements, and what to do when evidence is lost or if there is a discrepancy. Included in this policy should be periodic audits of all evidence within the agency's control. The time frame for these audits to occur (e.g., monthly, quarterly, semi-annually, or annually), as well as what percentage of evidence will be examined and who will conduct the audit, should be established.

In addition, an agency should establish a policy for auditing all other aspects of the agency's quality system, including a time frame for these audits to occur as well as who will conduct these audits. An agency may choose to bring in auditors from outside agencies or have internal auditors conduct the inspections.

### 12.2.4 Preparation, Use, and Storage of Chemicals

An agency must have a policy in place describing proper procedures for preparation, use, and storage of all chemicals that are maintained within the agency. This policy may address such issues as markings required on the chemicals when received, length of time a chemical can be kept and used if commercially purchased, shelf life of each reagent solution that is prepared within the agency, and a list of chemicals and reagent solutions that must be tested prior to use with casework. An agency should create and maintain a list of all chemicals and reagent solutions that are used in each section of the agency. In addition, an agency should have a plan for proper disposal of chemicals and reagent solutions, including contact information for any outside vendors that may be needed to implement the disposal of outdated or no longer used chemicals or reagent solutions.



## 12.2.5 Processing Techniques

An agency must have a policy in place to delineate what validated processing techniques are sanctioned by the agency. Any changes, updates, or deletions to a processing technique must be made available to all agency examiners. An agency may wish to include a guideline for examiners to follow that details what processing techniques are appropriate at each step of an examination. However, any list should be viewed as merely a guide.

## 12.2.6 Policies and Procedure Manuals for Electronic Fingerprint Systems

An agency must have policies and procedure manuals delineating the requirements for use, maintenance, and updates to any electronic fingerprint systems that are accessible to examiners within the agency. These policies and procedure manuals should be reviewed routinely to ensure that any changes, updates, or deletions are current.

These policies and procedure manuals may include, but are not limited to, such things as training that an examiner must successfully complete prior to having access to the electronic fingerprint system(s); documentation requirements, such as paperwork or images that must be maintained; and report wording requirements when an electronic fingerprint system is used in casework.

## 12.2.7 Examination Procedures

An agency must establish procedures for the processing and examination of evidence, note taking, and report writing. These procedures should describe established protocols and types of examinations performed. Additionally, they shall require that at the time of collection (whether in the field or in the laboratory), all latent print evidence shall be marked with minimal information (i.e., a unique case identifier, personal markings) and when relevant, information to explain the orientation or position of the latent. The substrate information should also be included. This may include the use of a diagram.

An agency must establish procedures for the comparison of friction ridge detail (SWGFAST, 2002, p 324). These procedures should describe established protocols (e.g., Are all latents to be compared or should the comparisons be concluded after the first latent is individualized?).

## 12.2.8 Verification

An agency should establish rules governing the qualifications that are needed to be a verifier. These qualifications may include a minimum number of hours of training, a minimum number of continuing education credits, or a minimum number of cases completed without quality issues. It is important to remember that, when setting a standard for the qualifications of a verifier, the number of years of service is not as important as the quality of work that has been produced.

**12.2.8.1 Verification.** Verification of a latent print comparison is “the confirmation of an examiner’s conclusion by another competent examiner” (SWGFAST, 2006, p 122). An agency must establish rules governing the verification process. These rules may be limited to individualizations but may also include exclusions or inconclusives.

**12.2.8.2 Blind Verification.** “Blind verification is the confirmation of an examiner’s conclusion by another competent examiner who has no expectation or knowledge of the prior conclusion” (SWGFAST, 2006, p 122). This process would require that the initial case examiner not place any markings of any kind, including conclusion notations, on any of the evidence needed for the verification examination, thus assuring that another examiner given the same evidence will be unaware of the initial examiner’s findings.

The Scientific Working Group on Friction Ridge Analysis, Study and Technology (SWGFAST) recommends blind verification “in cases involving an individualization, exclusion, or inconclusive of a person based on only a single latent print” (SWGFAST, 2006, p 122). An agency should establish policies regarding what cases require using a blind verification process.

## 12.2.9 Conflict Resolution

Because of the inherent variables (e.g., skill, experience) and the possibility of examiner error, an examiner and a subsequent verifier may provide results that are not consistent. An agency shall define what constitutes an inconsistency and conduct a quality review to resolve all inconsistencies in examination results.

The quality review must ensure that all policies are followed and that personal preferences are not allowed to take precedence over minimum standards and controls

or policy interpretation. Some quality reviews may resolve the inconsistencies by having the affected examiners document their analyses, followed by an unmediated discussion of the issue(s). The documented analyses should become a permanent addition to the case file. If the inconsistency is resolved following the examiner discussion, the decision should be documented in the case file and reported to management. If the inconsistency is not resolved at this level, an agency may need to use another examiner or may create a committee with representatives from both management and peer examiners to review the analyses and the case file. The committee would then attempt to resolve the inconsistency. Some agencies may need or elect to have a complete reexamination of the case made by an independent external examiner or agency.

To determine the root cause of the inconsistency, it may be necessary to review training records, the training program, and prior work performance.

All quality reviews should be documented and provide a determination of the correct results, the root cause(s) of the inconsistency, and whether the inconsistency would require any corrective action. Some quality reviews may be minor tasks that require a quick review, determination, and very little documentation. However, other quality reviews may require a great deal of effort to complete and may result in complex decisions.

### 12.2.10 Training

If an agency decides to establish an internal training program, the depth and scope of the training program must be included. In addition, any training that an agency provides should be in compliance with generally accepted practices and processing techniques within the scientific community. Copious records must be maintained of all training received by each examiner to aid in establishing competency records.

A formal training program should include a detailed description of the training to be provided to each trainee. For a training program to be successful, qualified trainers must be identified and given ample time and resources to create and maintain the training program.

A training program must also exist if an examiner who has already been trained to competency needs remedial training. An agency that has not established an internal training

program must have a mechanism in place for examiners already trained to competency to receive required remedial training from a reliable source.

Care should also be taken when interviewing and hiring trainees. Some agencies emphasize that the trainee must have a solid educational background in science and math. However, it is also essential that the trainee be evaluated for aptitude and ability to work in a highly structured environment that requires detailed analysis and where work is often accomplished autonomously. Although the testing to date is limited, it might be helpful to test prospective trainees for pattern recognition ability (Byrd, 2003, pp 329–330). It may also be beneficial to regularly test new trainees and current employees for visual acuity and overall eye health to ensure continued excellence and quality of work.

An agency that wishes to develop an internal training program is encouraged to review the SWGFAST *Training to Competency for Latent Print Examiners* document and contact agencies that have established training programs.

### 12.2.11 Proficiency Tests

To measure individual performance and provide demonstrative evidence of each examiner's comparison ability, each agency must establish proficiency testing requirements. These requirements shall include that each latent print examiner be tested at least annually (SWGFAST, 2009, p 679). This policy should delineate the type of testing and how often it must be completed. As part of the proficiency testing policy, documentation requirements should be delineated and maintained. The proficiency testing policy should also indicate whether the tests are to be taken independently and whether verifications of individualizations are required.

The test design may include agency procedures such as documentation, evidence handling, and related administrative actions. Test designs can include open testing (examiners are aware they are being tested), blind testing (examiners are unaware they are being tested), or double-blind testing (the agency and examiners are unaware they are being tested).

**12.2.11.1 Internal Proficiency Tests.** The internal proficiency test, after being created, should be reviewed by either a senior section member of the agency's staff or an outside source prior to distribution of the test. This review will ensure that the quality of the test is commensurate with cases that are routinely analyzed.



A quality assurance program should set parameters for internal proficiency tests, including that they shall contain multiple latent friction ridge impressions and known standards (SWGFAST, 2009, p 678). These parameters may also include the additional requirement of evaluating nonsuitable prints.

**12.2.11.2 External Proficiency Tests.** The use of a commercially prepared external proficiency test has the advantage of being nonbiased because the agency purchasing the test has no input into the makeup of the test and no advance notice of the test answers prior to submission of the test for grading. External proficiency testing ensures that the examiner is compared against the manufacturer's validated results. The results can also be compared with the results of other test takers.

**12.2.11.3 Blind Proficiency Tests.** An agency may use blind proficiency tests to verify the quality of an examiner's work without his or her knowledge. The agency may generate mock evidence and then assign it as a regular case. The case examiner may never know that he or she worked a blind proficiency test, unless the quality of work that was produced required a quality review.

**12.2.11.4 Double-Blind Proficiency Tests.** Having another agency submit mock evidence as a regular case can provide a double-blind test to evaluate the performance of the individual(s) completing the case and the agency's overall performance with respect to that case.

## 12.2.12 Technical Case Review

A technical case review is a useful tool to regularly determine the quality of casework and ensure reliable results. An agency must establish what constitutes a technical review, who shall conduct technical case reviews, and the frequency of the reviews. The American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB) defines a technical review as a "review of notes, data and other documents which form the basis for scientific conclusion" (ASCLD/LAB, 2005, p 68). SWGFAST further explains that "these reviews concentrate on whether the appropriate tests and examinations have been performed to support the results and conclusions reported and on whether sufficient supporting documentation is present. They also focus on whether the conclusions are consistent with the documentation and are within accepted practices" (SWGFAST, 2006, pp 124–125).

A technical review may include a partial or complete reworking of the case, and, therefore, technical case reviews must be conducted by another qualified latent print examiner.

## 12.2.13 Administrative Review

An agency must establish what constitutes an administrative review and who shall conduct administrative reviews. ASCLD/LAB defines an administrative review as "a procedure used to check for consistency with laboratory policy and for editorial correctness" (ASCLD/LAB, 2005, p 61). SWGFAST indicates that "administrative reviews shall be conducted by a supervisor or designee" (SWGFAST, 2006, p 125). An administrative review may include reviewing all documentation within a case file for technical accuracy or may simply be a review of the documentation verifying that no clerical errors, such as typographical errors, are on the worksheet or written report.

An agency must have a mechanism in place for dealing with cases in which an administrative review identifies a quality issue. If the issue is minor, then communication between the reviewer and the original case examiner may be sufficient to correct the issue. If the issue is major and the individual conducting the administrative review is not management, then management should be notified immediately. Management should then notify the quality manager and the quality reviewer (when applicable) to begin a formal review process to determine whether the error is singular in nature or systemic.

An agency may outline specific provisions in the quality manual regarding confidentiality when dealing with issues. An examiner identified as having an issue has a right for that issue not to become public knowledge among his or her coworkers. If nonmanagement personnel discover a quality issue, the agency may mandate that the original administrative reviewer cease involvement in any additional quality reviews that result from the initial issue being identified. In addition, the administrative review examiner should be required to maintain confidentiality regarding the issue and the original case examiner indefinitely, unless given specific permission by management to discuss these facts.

## 12.2.14 Testimony Review

Each agency should have a mechanism in place to review the testimony of each examiner within that agency. SWGFAST recommends that testimony reviews be done

annually (SWGFAST, 2006, p 126). This review should encompass both the technical accuracy of the testimony and the overall presentation and ability of the examiner to provide an accurate and articulate accounting of all examinations conducted and any conclusions or opinions noted.

An agency may require that the reviewer be a manager (preferably one with a background in the specialty being testified to), an individual from the training department (when applicable), or a peer. An agency may allow for a verbal or written contract with court officials. An agency may also incorporate the use of a preprinted evaluation survey containing specific questions that can be provided to either or both of the attorneys involved, as well as the judge, as another means of determining the quality of the testimony provided by the examiner.

### 12.2.15 Corrective Action

It may be necessary to take corrective action to remedy an issue related to the quality of the work product and to prevent further related issues. An agency must have a general description of what corrective action is appropriate according to the type of issue identified. This corrective action may include such options as removing an examiner from casework responsibility, a review of prior casework, requiring an examiner to receive and complete additional training in the area the issue was made, or reviewing additional casework completed by the examiner to determine whether the issue was singular in nature or systemic.

Corrective actions should not be construed as disciplinary actions. They are an important part of any quality review to detect and remedy any errors or issues relating to the quality of the work product.

### 12.2.16 Laboratory Safety Procedures

Each agency must establish safety procedures and policies for its system. The safety procedures and policies should be in compliance with Occupational Safety and Health Administration (OSHA) and state regulations. The safety procedures and policies should include such areas as personal protective equipment use, safe storage and disposal of chemicals, and how access to the facility is controlled. (See also section 12.2.4 on storing chemicals.) An agency may wish to include policies on blood-borne pathogens and chemical hygiene in its safety procedures.

**12.2.16.1 Designation of a Safety Manager.** An agency should designate a safety manager (irrespective of other responsibilities) who “has the defined authority and obligation to ensure that the requirements of the safety system are implemented and maintained” (ASCLD/LAB, 2005, p 67). Policies should be stated regarding the scope and depth of responsibilities for the safety manager. The requirements for and duties expected of the safety manager should be outlined in the safety documents and may contain such information as the qualifications of the safety manager; time limits, if any, that a person shall be designated as safety manager; reviewing and updating any written safety policies; disseminating all safety policies and updates to all examiners and management; maintaining all safety records; tracking all safety issues; and producing a written report annually detailing the safety record of the agency.

**12.2.16.2 Material Safety Data Sheets.** Material safety data sheets are provided by or can be acquired from all companies selling chemicals. Each agency must design a program for the collection, storage, and maintenance of the material safety data sheets for all chemicals purchased or used within the agency. Material safety data sheets provide vital safety information about chemicals and are a valuable tool to maintain safety within an agency.

### 12.2.17 Equipment Calibration and Maintenance

Performance checks are used by agencies to ensure that equipment and instruments are functioning to established criteria. An agency must establish a system to verify that each piece of analytical equipment is examined regularly to ensure proper working order. All equipment that requires calibration should have written documentation, such as a logbook, to verify the date that the equipment was examined, the person or business that examined the equipment, and any adjustments or calibrations that were performed on that instrument. An agency may establish a schedule that requires regular internal inspections, such as quarterly reviews, and an annual external review.

### 12.2.18 Method Validation Records

Each processing procedure must be validated and documentation must be maintained prior to use in casework. An agency must establish internal minimum standards for the validation process and sequence of processing



techniques. An agency may decide to accept an outside agency's published validation study. An agency may adopt another agency's or laboratory's procedure but must still demonstrate the protocol works as intended. This means that the agency must demonstrate that agency examiners using available equipment and instruments can achieve the established requirements.

Processing techniques should be reviewed periodically to ensure that the techniques are current and still effective. This review will allow for updates and revisions to be made to the processing procedure. Each agency must establish an appropriate time frame for these reviews (e.g., one year, five years).

### 12.2.19 Continuing Education

An agency should create and maintain a policy outlining and encouraging all examiners to pursue additional educational opportunities. These educational opportunities may include such coursework as undergraduate or postgraduate classes or degrees, academic or service-related seminars, and educational conferences provided by professional organizations (e.g., the International Association for Identification (IAI), the Canadian Identification Society, and the Fingerprint Society).

An agency may wish to include in this policy the tracking of individual requests or attendance at any of the above-mentioned continuing education opportunities. By tracking these requests and attendance records, an agency may better identify which individuals strive to further their knowledge about their profession, which may be acknowledged during a performance review.

## 12.3 Additional Quality Assurance Measures That May Be Added to a Quality Assurance Program

In addition to the basic components, an agency can add other components to its quality assurance program.

### 12.3.1 Quality Manager

A quality assurance program may have one individual who "has the defined authority and obligation to ensure that the requirements of the quality system are implemented and maintained" (ASCLD/LAB, 2005, p 66). In a large organization, this person may have the job title of quality manager

and this may be his or her primary function at that agency. For smaller agencies, the quality manager may be a part-time position. The quality manager may have casework responsibilities along with managing the quality assurance program.

It is important that an agency document the specific requirements and duties expected of this position. These may include, but are not limited to, qualifications of the quality manager; time limits, if any, that a person shall be designated as quality manager; reviewing and updating the quality manual; disseminating quality assurance program policies and updates to all examiners and management; completing all case file reviews or overseeing the work produced by quality reviewers; maintaining all quality records; tracking all quality issues; and producing a written report annually detailing the quality record of the agency.

### 12.3.2 Minimum Standards and Controls

An agency may establish a set of minimum standards and controls to ensure that all analysts within the agency understand exactly what is expected regarding the quality of casework being produced. These minimums should be clear and precise to allow for easy understanding and should include all requirements for evidence handling, evidence examination, evidence preservation, examination documentation, evidence disposition, and report wording.

If an agency establishes minimum standards and controls, it must establish a policy for reevaluating them. This reevaluation should include a timetable to ensure that all standards and controls are accurate and current with generally accepted scientific practices.

Minimum standards and controls for each aspect of casework should be documented either in the agency's quality manual or in the agency's procedures manual, when applicable.

### 12.3.3 Organization and Management Requirements

An agency may establish organization and management requirements for all staff members. Organization and management requirements may include the delineation of organizational structure, administrative practices, and delegation of authority. Organization and management requirements should be documented either in the agency's quality manual or in the agency's overall policy manual.

### 12.3.4 Personnel Requirements

An agency may establish personnel requirements for all staff members. These requirements may include minimum educational requirements, specific undergraduate or post-baccalaureate class-specific requirements, and employee development by attending professional organization meetings and seminars. Personnel requirements should be documented either in the agency's quality manual or in the agency's overall policy manual.

### 12.3.5 Facility Requirements

An agency should ensure that the working facility is designed for maximum case productivity while maintaining the highest level of safety available. This policy should address safety showers, eye wash stations, fire extinguishers, fume hood air flow requirements, and time frames for verifying the working condition of these safety features.

In addition, a facility requirement policy should contain specific time frames and conditions, such as the minimum number of staff required onsite to ensure the safety of staff when engaging in certain activities, such as chemical processing or laser examination. Specific safety requirements and guidelines can be found by contacting OSHA. State regulations should also be identified and followed. Facility requirements should be documented either in the agency's quality manual, safety manual (if such a manual exists), or overall policy manual.

### 12.3.6 Use of External Laboratory Services

Agencies may find it necessary, because of large backlogs or the inability to perform a specific service, to pursue the use of external laboratory services. If that is the case, it is the agency's responsibility to ensure that any external laboratory service with which it initiates a contract adheres to all of the agency's quality assurance policies and procedures regarding all aspects of casework, including evidence handling and evidence processing.

### 12.3.7 Agency Accreditation and Certification

Examiner certification and laboratory accreditation have become demonstrative measures of quality within the forensic disciplines. These programs have been promoted to provide the criminal justice system with generally accepted methods for quality assurance. Examiner certification demonstrates a level of competency and ability for the individual,

and accreditation demonstrates agency compliance with accepted policies and procedures for quality assurance.

**12.3.7.1 International Association for Identification – Latent Print Certification Program.** The IAI established the program in 1977. This certification program requires a minimum of two years' experience and a bachelor's degree. (Years of experience can be substituted for the educational requirement.) Basic testing requirements include a written test, a fingerprint pattern interpretation test, and a comparison test.

**12.3.7.2 American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB) Legacy Program.** The ASCLD/LAB Legacy Program has an extensive process to accredit agencies. This accreditation process involves reviewing an agency's written policies, procedures, and casework and then inspecting that agency to confirm that it is following minimum accreditation standards and the policies it has set forth. ASCLD/LAB evaluates an agency according to three criteria: essential, important, and desirable. The definition of essential is "standards which directly affect and have fundamental impact on the work product of the laboratory or the integrity of the evidence" (ASCLD/LAB, 2005, p 63). The definition of important is "standards which are considered to be key indicators of the overall quality of the laboratory, but may not directly affect the work product nor the integrity of the evidence" (ASCLD/LAB, 2005, p 64). The definition of desirable is "standards which have the least affect on the work product or the integrity of the evidence but which nevertheless enhance the professionalism of the laboratory" (ASCLD/LAB, 2005, p 63).

In addition, ASCLD/LAB has set new standards on many issues that continue to push the forensic community to a higher level of quality. An ASCLD/LAB accreditation must be renewed every five years. This renewal involves the same process as the initial accreditation process and is outlined extensively by ASCLD/LAB in its manual.

**12.3.7.3 International Organization for Standardization (ISO).** ISO works in conjunction with the International Electrotechnical Commission (IEC) to create a worldwide standardization system. ISO is the world's largest developer of standards. ISO's principal activity is the development of technical standards. ISO has created a technical standard (17025) for any testing and calibration laboratory; this standard is applicable to forensic laboratories. The function of ISO does not include accreditation programs. It sets



standards that allow agencies to pursue ISO accreditation through accrediting bodies. Currently, ASCLD/LAB and Forensic Quality Services (FQS) have programs that allow forensic agencies to pursue accreditation that is based on ISO/IEC standard 17025.

The ASCLD/LAB International Accreditation Program is based on the requirements of ISO/IEC 17025, plus supplemental requirements that are based on the International Laboratory Accreditation Cooperation (ILAC) Guide 19 (Guidelines for Forensic Science Laboratories) and the ASCLD/LAB Legacy Program requirements.

Forensic Quality Services-International's (FQS-I) accreditation program is based on the requirements of ISO/IEC 17025, ILAC Guide 19, and FQS-I field-specific criteria. The field-specific criteria include "Forensic Requirements for Agencies that Perform Latent Print Testing," developed by a technical advisory committee of latent print examiners specifically for the FQS-I program (FQS-I, 2006).

## 12.4 Conclusion

The forensic science community must continue to push for higher standards of forensic excellence. An examiner must always remember that the work produced in a forensic agency has the potential to have a dramatic effect not only on a suspect in a criminal case, but also on the victim and both the suspect's and victim's families. As examiners, we owe it to the community we serve to produce a quality work product each time we work a case, no matter what the offense.

## 12.5 Reviewers

The reviewers critiquing this chapter were Patti Blume, Deborah Friedman, Alice Maceo, Kenneth O. Smith, Jr., Lyla A. Thompson, and Juliet H. Wood.

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