

AQR: Proficiency Testing Program

Introduction

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Proficiency testing is a reliable method of verifying that the Laboratory of Forensic Services' technical procedures are valid, that the quality of each examiner's work is being maintained, and that case record review is effective.

This Proficiency Testing Program complies with the ANAB Proficiency Testing and Review Program.

Critical task for the analyst

The completion of proficiency tests is a *critical task* demonstrating the analyst's ability to

- make thorough scientific investigations
- identify substances and materials from unknown sources
- study and interpret physical evidence by means of laboratory analyses and examinations
- prepare reports of findings

Demonstration of proficiency is a requirement of continuing employment in the laboratory.

Priority of proficiency testing

Proficiency testing, by the direction of the Laboratory Director, will take priority over assigned casework.

Program management

The Quality Manager is responsible for the management of the Proficiency Testing Program.

The Quality Manager may appoint a designee to assist in an advisory capacity (see *Organization*, [ORG: Staff Responsibilities](#), *Quality Manager* in the *Quality Manual*). Designees will act in the strictest confidence and will not discuss their views, conclusions, or recommendations with fellow analysts until test results are released by the Quality Manager.

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**Annual
required testing
for analysts**

All analysts will be required to successfully complete at least one proficiency test annually in each discipline in which they do casework (see *Disciplines and characteristics tested*).

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The types of proficiency tests should vary over the 4 year accreditation cycle to encompass all aspects of an analyst's job.

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7.7.6.b AR

Each DNA analyst must successfully complete two external proficiency tests annually in each DNA technology to the full extent in which the analyst performs casework examinations. One test must be assigned in the first six months and one in the last six months of the calendar year. The tracking of the interval between proficiencies will be by assignment date. Proficiencies must be assigned at least four months but no more than eight months apart. These tests must be from an ANAB approved provider.

**Successful
completion**

For the analyst, the successful completion of a proficiency test involves every aspect of professional forensic laboratory work that goes into acceptable completion of casework, including

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7.7.5.d AR

- following established procedures
- interpreting analytical results correctly
- providing accurate notes supporting all conclusions
- producing an understandable report
- getting an acceptable answer to the question at hand

Proficiency testing, as with all Quality System activities, has as a primary function the production of the highest quality work product possible through the identification and correction of problems. Therefore, a proficiency test may also be considered successfully completed when all necessary corrective actions are completed (see [AQR: Proficiency Test Inconsistencies](#)).

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Disciplines and characteristics tested

The disciplines and characteristics tested subject to proficiency testing in the Laboratory of Forensic Services are as follows:

Section	Discipline	Characteristic Tested
Criminalistics	Bloodstain Pattern Analysis	Area of Origin Determination
		Bloodstain Pattern Determination
		Event Reconstruction
	Crime Scene Investigation	Scene Documentation
		Length Measurement
		Enhancement
		Presumptive Testing
		Collection
		Event Reconstruction
		Trajectory Determination
	Firearms and Toolmarks	Collection
		Physical Comparison
		Determination of Functionality
		Length Measurement
		Serial Number Restoration
		Trigger Pull Force Measurement
		Qualitative Chemical Determination
		Distance Determination
		Ejection Pattern Determination
		Trajectory Determination
		Product (Make/Model) Determination
	Fire Debris and Explosives	Qualitative Determination
	Footwear/Tire	Collection
		Enhancement
		Physical Comparison
		Product (Make/Model) Determination

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Disciplines and characteristics tested
(continued)

Section	Discipline	Characteristic Tested
Criminalistics	Gunshot Residue	Collection
		Qualitative Determination
	Materials (Trace)	Collection
		Physical Determination
		Chemical Determination
		Physical/Chemical Comparison
Biology	Biology	Collection
		DNA-STR
		DNA-YSTR
		Body Fluid Identification
		Relationship Testing
		Individual Characteristic Database (CODIS)
Toxicology	Toxicology	Qualitative Determination
		Quantitative Measurement
Chemistry	Seized Drugs	Qualitative Determination
		Weight Measurement

Supervisor requests

At any time, a supervisor may request the Quality Manager to initiate a proficiency test in a specific discipline or characteristic tested in order to verify the effectiveness of the Quality System in that area.

Director initiated testing

The Laboratory Director may initiate proficiency tests at any time.

- The Director may issue a blind test consisting of a simulated evidentiary specimen prepared and submitted by a law enforcement officer without alerting the supervisor or the analyst.
- The Director may select a previously worked case and submit it for reanalysis by another analyst.

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Test types and sources

Proficiency tests may be of the following types and sources:

- external
 - subscription to a commercial testing program
- interlaboratory
 - designed and manufactured by another forensic laboratory or association
 - previously worked case
- internal
 - designed and manufactured by the Laboratory of Forensic Services
 - previously worked case

Interlaboratory and internal tests may be any of the following:

- known
- blind
- re-examination of previously worked case material

7.7.5.a

The Quality Manager is responsible for

- obtaining subscriptions and other tests manufactured outside of the laboratory and for initiating in-house manufacture of tests
- ensuring the results are not known or readily available to the analyst being monitored

External tests

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7.7.5.e

7.7.7.a AR

7.7.7.b AR

The laboratory will participate annually in, and successfully complete, at least one external proficiency test for each discipline in which it provides service. Results of the proficiency tests will be submitted to the test provider on or before the due date. The providers of these required external tests must be approved by ANAB.

If an ANAB approved external proficiency test is not available for a discipline or characteristic tested, then the laboratory will use an alternate source for the test with ANAB approval and by which the laboratory's performance can be assessed.

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Internal tests

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Internal proficiency tests must be designed and prepared in such a manner that the samples are stable and the target results are obtainable with available methodologies and expertise.

Target results for test samples prepared in the laboratory must be verified prior to assignment. Verification must be performed by an analyst, other than the test preparer if possible, who is qualified to do casework in the tested discipline or characteristic tested.

Verification may be accomplished by testing a sub-sample of the prepared test item or a duplicate item prepared in the same manner as the test item.

Photographic verification may be appropriate for certain types of crime scene discipline tests such as basic crime scene evidence recognition.

Verification may be provided by an analyst external to the laboratory. Records of the external analyst's proficiency in the tested discipline or characteristic tested must be provided along with the verification records.

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7.7.8.a-g AR

Laboratory standards that have been previously verified for use either before or during casework may be used as test samples and do not require additional verification records.

Written or oral test questions and target answers must be reviewed by an individual with expertise in the area being tested as verification of the test design.

All internal tests submitted to the Quality Manager must have an answer key and have verification records attached.

Release of results

The Laboratory of Forensic Services grants permission to external proficiency test providers to release test results to ANAB, the American Board of Criminalistics and any other certifying body.

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General testing process

This table gives the general proficiency testing process.

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Stage	Description
1	The test is assigned a laboratory case and submission number by the Quality Manager. A chain of custody is created and maintained.
2	The test is assigned to the analyst by the Quality Manager with an accompanying announcement to the analyst's supervisor.
3	<p>The test is analyzed in normal casework fashion using the laboratory's own approved and documented test procedures.</p> <p>NOTE: In disciplines where work on one case may be distributed to several analysts, the analyst assigned to the proficiency test will be requested to perform all or a specified portion of the testing.</p> <p>NOTE: The analyst should go to their supervisor, not their co-workers, if they require advisory assistance during the test. The supervisor will determine the extent and nature of aid appropriate.</p>
4	A written report of the results is prepared by the analyst in normal laboratory report format. Forms supplied by an external test provider must be completed.
5	<p>The test file, which includes the report and all notes, charts, graphs, photographs, and the provider forms, is submitted for technical review.</p> <p>The technical reviewer will record all required corrections and any additional observations on the <i>Proficiency Test Review Checklist</i>. This form is attached to the test file. After the required corrections are made, the technical reviewer records the completion of the technical review in the case management system.</p> <p>NOTE: The technical reviewer will discuss significant issues discovered during the review process with the supervisor. See <i>AQR: Problems During Proficiency Test</i>, for dealing with analyst technical problems at this point.</p> <p>NOTE: For internally prepared tests, the test manufacturer should not perform the technical review unless there are no other qualified analysts to perform such review.</p>

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General testing
process
(continued)

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7.8.7.1

Stage	Description
6	<p>The test file is submitted for administrative review.</p> <p>The administrative reviewer will record all required corrections and any additional observations on the <i>Proficiency Test Review Checklist</i> already attached to the test file.</p> <p>After the required corrections are made, the administrative reviewer records the completion of the administrative review in the case management system, attaches the released analyst's report to the case file, and submits the file and forms to the Quality Manager.</p>
7	For external tests, the appropriate forms are faxed or entered electronically to the provider by the Quality Manager or designee.
8	<p>Upon the receipt of the target results from the provider, the test file is reviewed by the Quality Manager or designee comparing the results and conclusions reached by the analyst with the provider's information.</p> <p>See <i>AQR: Proficiency Test Inconsistencies</i> for dealing with identified inconsistencies at this point.</p>
9	The results of the review and any need for further corrective action are recorded by the Quality Manager in the <i>Proficiency Test Result Report</i> .
10	<p>Requested corrective actions are completed within 90 days from the date of initiation.</p> <p>The test report is submitted by the Quality Manager to the Director for review and signature. The signed test report is returned to the Quality Manager. The test is complete.</p>
11	The Quality Manager and unit supervisor fill out a <i>Proficiency Feedback</i> form or <i>DNA Proficiency Feedback</i> form for the Biology unit and go over the results with the analyst. The Quality Manager, unit supervisor, and analyst sign the form and the form remains with the test file. A copy of the signed test report is given to the analyst.

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General testing process (continued)

Stage	Description
11	<p>Upon receipt of the test report, the analyst transfers the test items to the Evidence Section.</p> <p>Test items may be retained by the Quality Manager in Evidence Section storage for possible reuse as internal proficiency or competency tests or as training aids. Retained test items with limited viability should be destroyed on a routine basis. All other test items should be inventoried on a regular basis and overstock items or items retained over five years destroyed as appropriate.</p>

Director's authorization to continue work

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Upon successful completion of a proficiency test, the Laboratory Director authorizes the analyst to continue work using all methods, equipment, and instrumentation as listed in the technical procedures for the relevant discipline or characteristic tested and to issue test reports. The *Proficiency Test Result Report* contains the authorization.

The laboratory also maintains a master list authorizing each analyst to conduct work in a discipline and/or characteristic tested. The list includes references to methods, equipment, and instrumentation used.

Test due dates

Test due dates are determined as follows.

- Specified due dates on external and interlaboratory tests will be followed if the allotted time is within the routine capabilities of the laboratory.
- For external or interlaboratory tests without specified due dates and all internal tests, due dates will be set by the Quality Manager based on the complexity of the test and after consultation with the appropriate supervisor. These due dates should not exceed 45 working days from the date of assignment.

It is important that results be submitted to ANAB approved external providers in a timely manner. The provider may be requested to supply a report of these results to ANAB for review (see [AQR: Proficiency Test Inconsistencies](#), PRC review). All proficiency tests must be submitted to the provider on or before the due date.

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Exception

Laboratory management realizes that there will be circumstances beyond the control of the analyst, when a proficiency test is not completed by the specified due date.

In those instances, the analyst or analyst's supervisor should keep the Quality Manager apprised of the circumstances for the late completion. It is expected that the analyst will make every effort to complete the test as soon as possible.
