

PROFICIENCY TESTING FROM A LARGE LABORATORY SYSTEM PERSPECTIVE

Brady W Mills, M.S.

Deputy Assistant Director

Texas Department of Public Safety

Law Enforcement Support – Crime Lab Service



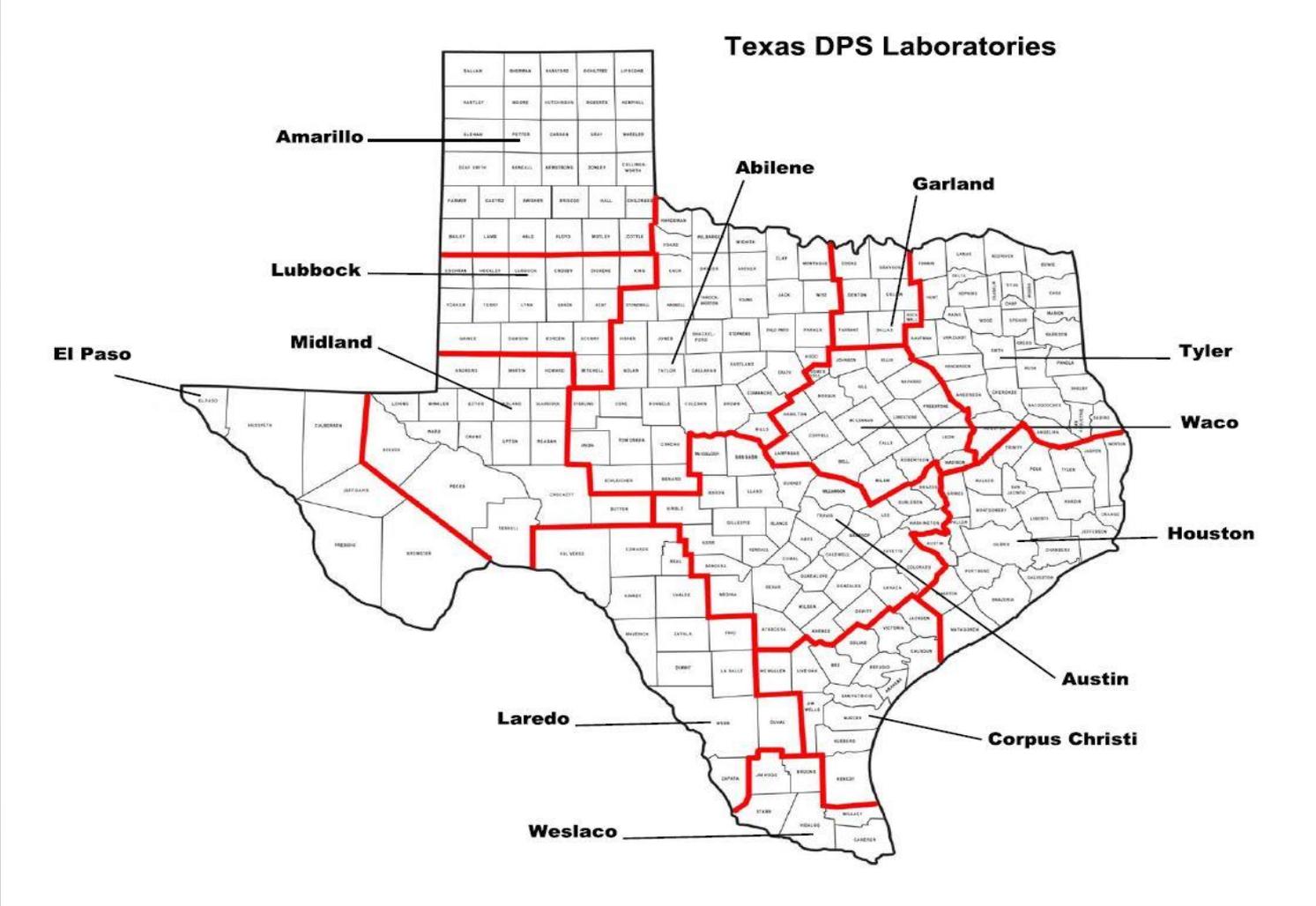
TEXAS DPS CRIME LABORATORY SERVICE

- The Crime Lab provides expert forensic services for any criminal justice agency investigating a criminal matter.
- These services include:
 - the scientific examination and analysis of evidentiary material,
 - supervision and management of specific scientific technical programs,
 - assistance in scientific investigations,
 - expert testimony concerning the analysis of evidentiary material and interpretation of technical data and laboratory findings, and
 - other related forensic services and activities.

TEXAS DPS CRIME LABORATORY SERVICE

- The Texas DPS Crime Laboratory is a laboratory system with labs at 13 different locations across the state of Texas. Crime Lab personnel provide a variety of services to law enforcement agencies in the investigation of crimes.
- The Crime Laboratory has approximately 430 full-time positions that includes forensic scientists, evidence technicians, and support personnel.

TEXAS DPS CRIME LABORATORY SERVICE



TEXAS DPS CRIME LABORATORY SERVICE

CRIME LABORATORY SERVICES

Crime Lab	Drugs	Clam Lab Assistance ¹	Blood Alcohol	Toxicology	Biological Evidence	DNA	Firearms and Toolmarks/NIBIN	Gunshot Distance Determination	Serial Number Restoration	Fibers	Paint	Hair	Shoe/Tire Impressions	Unknown Substances	Lamp Filament	Glass	Gunshot Residue	Latent Prints	AFIS	Questioned Documents	Digital Evidence ²	Crime Scene Assistance ³	Photography	
Abilene	X	X	X																					
Amarillo	X	X																						
Austin	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Corpus Christi	X	X	X		X	X																X		
El Paso	X	X	X		X	X	X	X	X															
Garland	X	X	X		X	X	X	X	X	X	X	X	X	X			X						X	
Houston	X	X	X		X	X	X	X	X	X	X	X	X	X									X	
Laredo	X																							
Lubbock	X	X	X		X	X	X	X	X	X	X	X	X	X									X	
Midland	X	X	X																					
Tyler	X	X	X		X		X	X	X															
Waco	X	X	X		X	X																X		
Weslaco	X		X		X	X	X	X	X	X	X	X	X	X			X					X		

¹ Clandestine laboratory shut-down and evidence collection

² Digital Evidence includes computer forensic, video, and audio examinations

³ Assistance at complex scenes

TEXAS DPS CRIME LABORATORY SERVICE

- Crime Laboratory Service Quality Policy Statements
 - The commitment of top management is reflected by the statements regarding the focus of the laboratory as well as the quality objectives. Quality services will also be enhanced by affording employees the opportunity to develop their full potential in a working environment that recognizes achievements and encourages excellence.
 - Management System of the Crime Laboratory has as its focus to:
 - Provide World Class Service;
 - Continually improve the effectiveness and efficiency of the services provided;
 - Ensure compliance with the International Standard ISO/IEC 17025 and other quality assurance standards and maintain accreditation in the Crime Laboratory Service.
 - Overall laboratory strategic goals and objectives include:
 - Ensure high level of quality control is maintained for laboratory operations;
 - Provide timely and accurate testing reports and/or calibration certificates.

ISO 17025:2005

- The DPS crime laboratories have been continuously accredited since 1986 through the American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB)
 - Provides management and technical standards that
 - Assist with establishing a shared value system and
 - Promotes a continuous improvement philosophy
 - proficiency tests
 - testimony monitoring
 - other quality assurance activities are reviewed annual.

TEXAS DPS CRIME LABORATORY SERVICE

Proficiency Testing

- Proficiency testing provides a method of evaluating that the laboratory's technical procedures are valid and that the quality of each examiner's work is being maintained. The nature of proficiency testing is that examiners analyze and interpret data from the same material with the expectation that their results will be consistent with the manufacturer's expected results and that they complete the testing unaware of the expected results.

TEXAS DPS CRIME LABORATORY SERVICE

Frequency of Testing

- Each laboratory is required to participate in at least one external proficiency test during the calendar year for each discipline in which the laboratory provides casework services. The external proficiency test shall be from an ASCLD/LAB approved test provider where available.
- Each examiner is expected to conduct a proficiency test according to the following:
 1. Successfully complete, at a minimum, an annual proficiency test in each discipline for which they conduct examinations. This test may be external, internal, or an evidence re-examination.
 2. Each DNA/CODIS examiner is required to successfully complete an external proficiency test twice each year from an approved ASCLD/LAB provider.

TEXAS DPS CRIME LABORATORY SERVICE

Sample Procurement or Preparation

- External Tests
 - External proficiency tests are purchased by a ASCLD/LAB approved test provider where available. Other external test providers may be used in disciplines for which there is no approved test provider.
- Internal Tests
 - The laboratory system will operate, as needed, an internal proficiency program designed to supplement the external proficiency program.
- Evidence Re-examination
 - The Quality Manager may assign an evidence re-examination to be performed as a proficiency at any time. The circumstances where evidence re-examination may be an appropriate testing mechanism as part of the quality assurance system for disciplines and subdisciplines include: no external tests exist, an examiner either failed a previous test or did not take a regularly scheduled test, or an examiner infrequently performs casework in a non-routine subdiscipline.

TEXAS DPS CRIME LABORATORY SERVICE

Assessment of Internal and External Tests

- The Quality Assurance Specialist will review each proficiency test file for completeness and reviewer's comments. The submitted test results are compared with other system-wide test results as they are received.
- If there is sufficient time before the provider's due date to investigate and correct inconsistent results, they may be corrected by the test taker before submission to the provider and a Quality Action Plan will be initiated. Any corrective actions will also be documented on the proficiency test assessment.
- The System Quality Assurance Section will forward copies of the test results to the test provider.

TEXAS DPS CRIME LABORATORY SERVICE

Potential Inconsistencies

- The Quality Assurance Specialist shall review the summary report from the test provider when it becomes available.
 1. Class I - The nature and cause of the inconsistency raises immediate concern regarding the quality of the laboratory's work product. This may include an erroneous identification, false identification, or false positive.
 2. Class II - The inconsistency noted is due to a problem which may affect the quality of the work, but is not serious enough to cause immediate concern for the over-all quality of the laboratory's or examiner's work product. This may include a missed identification or false negative.
 3. Class III - The inconsistency noted is determined to have only minimal effect or significance, be unlikely to recur, is not systemic, and does not significantly affect the fundamental reliability of the laboratory's or examiner's work. This may include an administrative or transcription mistake.

TEXAS DPS CRIME LABORATORY SERVICE

Assessment of Internal and External Tests

- A summary of the test results will also be provided to management for review.
- All correspondence with the ASCLD/LAB Proficiency Review Committee (PRC) and/or accrediting body concerning proficiency test issues must be forwarded to the Quality Assurance Coordinator for evaluation prior to issuance.
- The Quality Manager must report all Class I and II inconsistencies to ASCLD/LAB and the Texas Forensic Science Commission.

TEXAS DPS CRIME LABORATORY SERVICE

- Of the service's 430 full-time positions 315 are proficiency tested (several currently take more than one test).
- The Texas DPS system completed 545 proficiency tests in FY15.
- One Quality Assurance Specialist is assigned to run this program.
- Thirteen Quality Managers and eight Quality Assurance Specialist direct the implementation of the program.
- Annual program cost
 - Testing materials \$150K
 - Direct salary cost \$60K

TEXAS DPS CRIME LABORATORY SERVICE

DNA testing Challenges

- Must get first external DNA test within 6 months of qualifying date (within 6 months of authorization to begin independent casework) and on that test the analyst must cover all methods in which he/she was trained to use.
- 2 external tests are required per year per analyst; analysts cannot share/use the same test packet which increases costs.
- Each test must include each technology – so on both tests you have to cover both Ystrs and autosomal STRs.
- One test per year must include any other autosomal testing (so you have to do miniSTRs once per year in addition).
- You have to ensure all methods (both manual and automated) are covered over the course of a year.
- Technical reviewers have to participate in the semiannual external proficiency testing program on the same technology, platform, and kit as the data they review.

TEXAS DPS CRIME LABORATORY SERVICE

Testing plan

- Trace and Firearms sub disciplines
- Underutilized disciplines

The Trace SOP requires examiners to be tested every other year in: Paint, Fibers, Impressions, Hair, Filaments, Glass, and GSR	Paint	Fibers	Impressions	Hair	Lamp Filament (Bulb)	Physical/Fracture match	unknown substance	Gunshot Residue (GSR)	Glass
Lab - Austin									
Examiner 1	2013, 2015, 2017	2014, 2016, 2018	2014, 2016, 2018	2013, 2015, 2017	2014, 2016	2015	2014		Annual
Examiner 2			2013, 2015, 2017	2014, 2016, 2018		2014		Annual	

TEXAS DPS CRIME LABORATORY SERVICE

- A Laboratory Proficiency Testing Program is established as a Quality Assurance measure to test all possible processes involved in the evidence handling and testing procedures. It is not only a test of the analyst's proficiency, but is also used to identify areas of improvement in all aspects of the laboratory workflow.
- As the TXDPS accrediting body, ASCLD/LAB mandates minimum requirements for a proficiency testing program. These are in addition to the standards addressing proficiency testing in the ISO 17025 document which state that proficiency testing programs are included as quality control procedures to monitor the validity of tests undertaken.
- Different techniques of proficiency testing may also be discussed. These may include re-examination, blind and double-blind testing, team testing, and compartmentalization of proficiency testing for personnel who perform limited testing/reviewing functions.

PROFICIENCY TESTING FROM A LARGE LABORATORY SYSTEM PERSPECTIVE

Brady W Mills, M.S.

