2025 HAMILTON COUNTY CORONER CRIME LABORATORY ANNUAL REPORT

Brian Scowden-Crime Lab Director

Profile of the Organization

The Hamilton County Coroner's Crime Laboratory (HCCL) is located in Blue Ash, Ohio and occupies a three-story building that was built in 2021. The mission of the crime laboratory is to provide reliable, accurate, timely, and impartial forensic services to the local and regional criminal justice community. The crime laboratory has an additional responsibility to assist forensic pathologists with determining cause and manner of death.

The Hamilton County Coroner's Crime Laboratory provides services in Drug Chemistry, Firearms/Toolmarks, Forensic Biology, Toxicology, and Trace Evidence. The crime laboratory currently has a staff of 30 analysts who process 8000-10000 cases a year. Most of the casework completed by the laboratory originates from Hamilton County law enforcement agencies. However, the laboratory performs analysis on evidence submitted by agencies outside the county for a fee. The evidence accepted is for investigations, not only at the local and state level, but the federal level as well. The analysts, as part of their analysis, provide expert testimony when required. On occasion, the staff at the laboratory provide training and give presentations to law enforcement, universities, and high schools.

Quality (Accreditation and Certification)

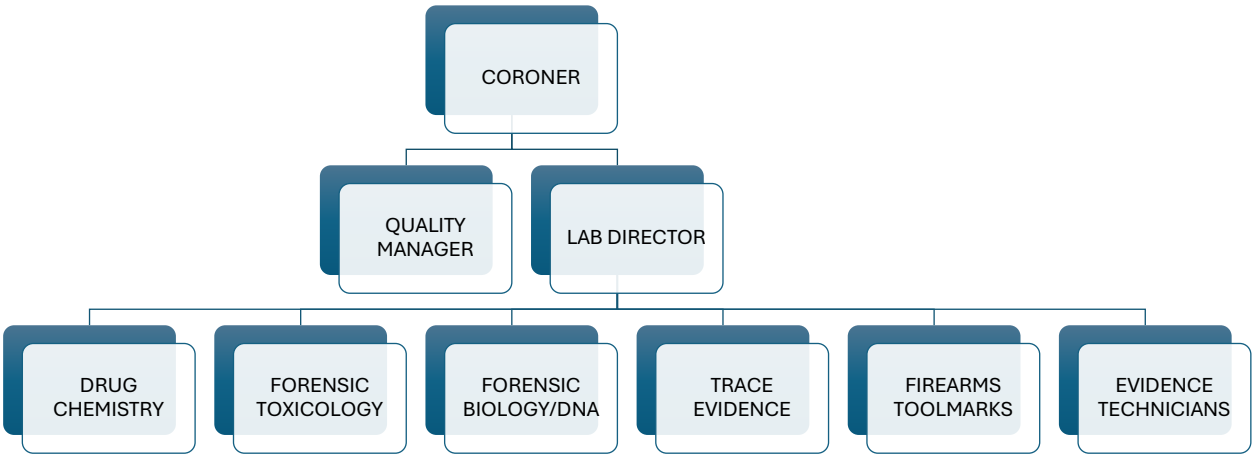
The Hamilton County Coroner's Crime Laboratory is committed to meeting the needs of our customers by providing accurate, impartial scientific examinations and related services. An effective quality management system ensures the laboratory meets these commitments. The primary objectives of this quality system include but are not limited to:

a. Providing effective forensic services to the law enforcement community commensurate with available personnel and equipment.
b. Complying with the highest national standards for scientific competence and professional responsibility.
c. Maintaining a healthy, safe, and pleasant working environment for all employees.

To help the laboratory meet those objectives, HCCL is currently accredited by ANAB (ANSI National Accreditation Board) to ISO/IEC 17025 standards for testing, calibration, and forensic laboratories.

To maintain accreditation, HCCL undergoes a full site assessment every four years with annual assessment activities to evaluate and confirm ongoing conformance. The laboratory successfully completed a full site assessment in March of 2023.

Laboratory Organizational Chart



Evidence Management

Staffing:

The laboratory has two full-time evidence technicians.

Duties:

The evidence technicians accept all evidence submitted to the laboratory. They are responsible for logging case information and evidence items into the laboratory's management information system at the time of receipt. They are responsible for organizing the storage of evidence so it can be retrieved when needed and the release of evidence as necessary. They deliver evidence for testing to each section's vestibule and pick up evidence from the vestibule when analysis has been completed.

Figure 1: % of Cases submitted by section for 2025

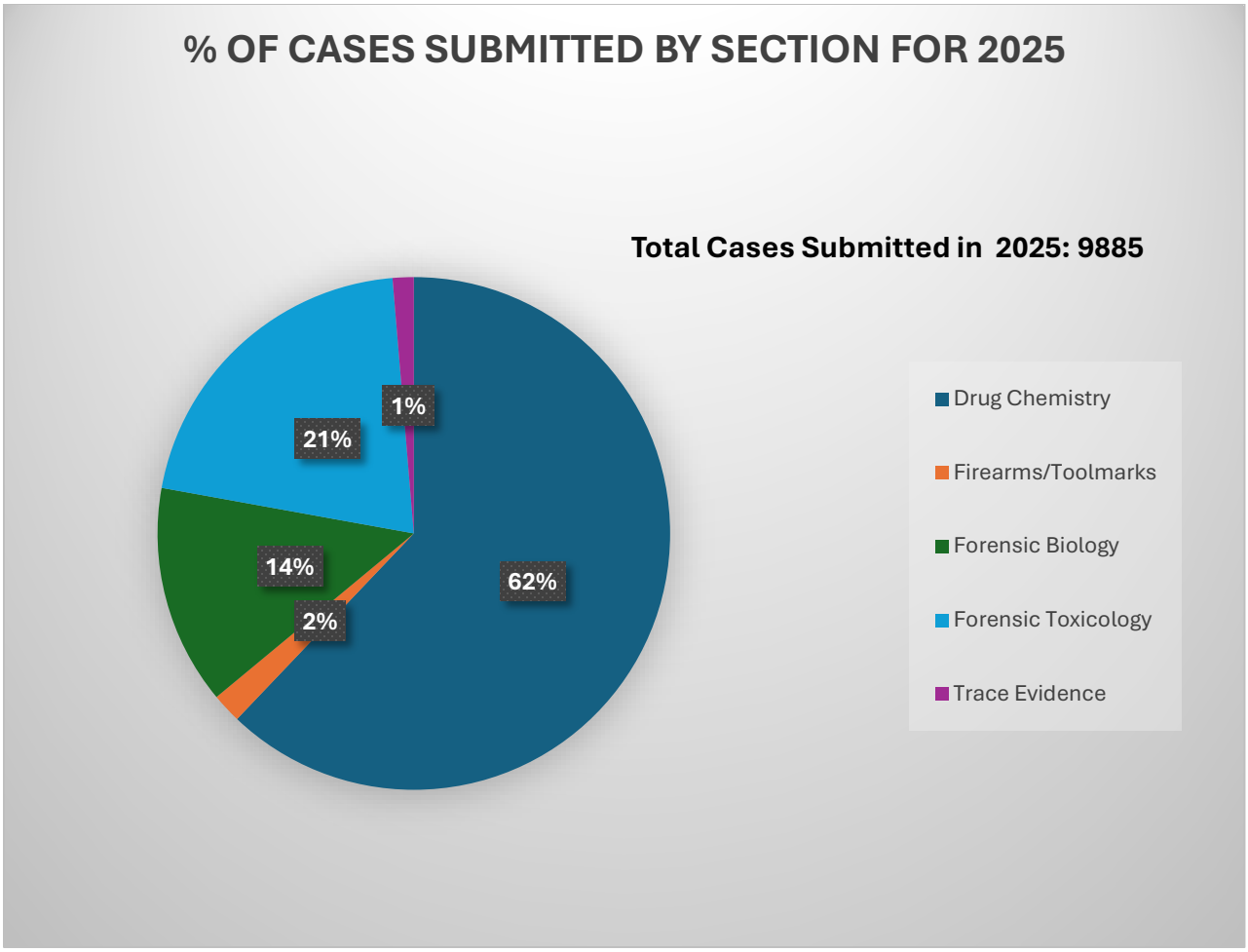

% OF CASES SUBMITTED BY SECTION FOR 2025
Total Cases Submitted in 2025: 9885
1%
21%
14%
2%
62%
Drug Chemistry
Firearms/Toolmarks
Forensic Biology
Forensic Toxicology
Trace Evidence

Figure 1

Drug Chemistry Section

Staffing:

The Drug Chemistry Unit is currently staffed by six full-time analysts.

Duties:

The Drug Chemists identify controlled substances, non-controlled substances of abuse, and diluent materials in seized evidence samples. They perform analysis on solid dosage type items including powders, solid material, liquids, tablets, and vegetation. They also perform analysis on residues from digital scales, syringes, packaging materials, and smoking devices. The Drug Chemists also perform open container analysis for ethyl alcohol content.

2025 Statistics:

Drugs and Marihuana:

The section completed analysis on **6407 cases** with **12999 items analyzed** and **52375 substances identified**.

Open Container:

The section completed analysis on **328 cases** with **345 items** analyzed.

Average Turnaround time:

14.01 days

Figure 1: A bar graph displaying the 8 most commonly identified substances plus carfentanil and negative items for 2025. These item counts include residues but exclude counts from tablets.

Figure 2: Comparison of Licit vs Illicit pharmaceutical preparations in 2025. Licit tablets are those tablets that contain the compound the tablet markings indicated. Illicit tablets are those tablets that contain a different compound than the tablet markings indicated and/or those tablets clandestinely manufactured (i.e. methamphetamine).

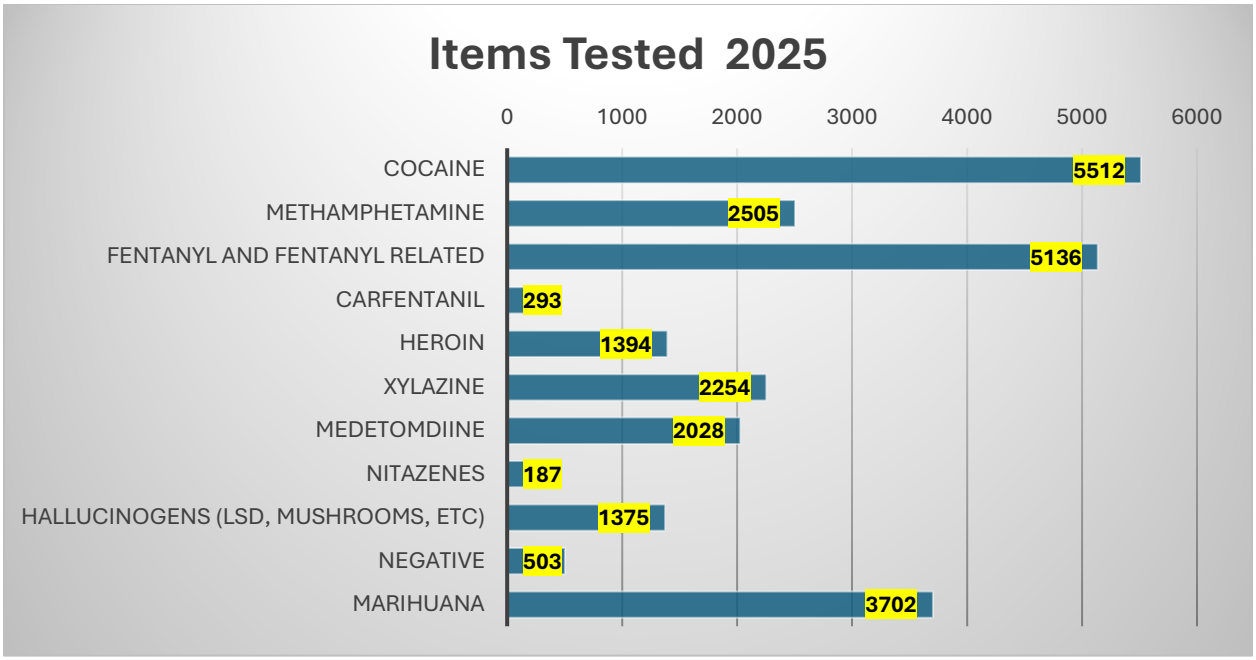


Figure 1

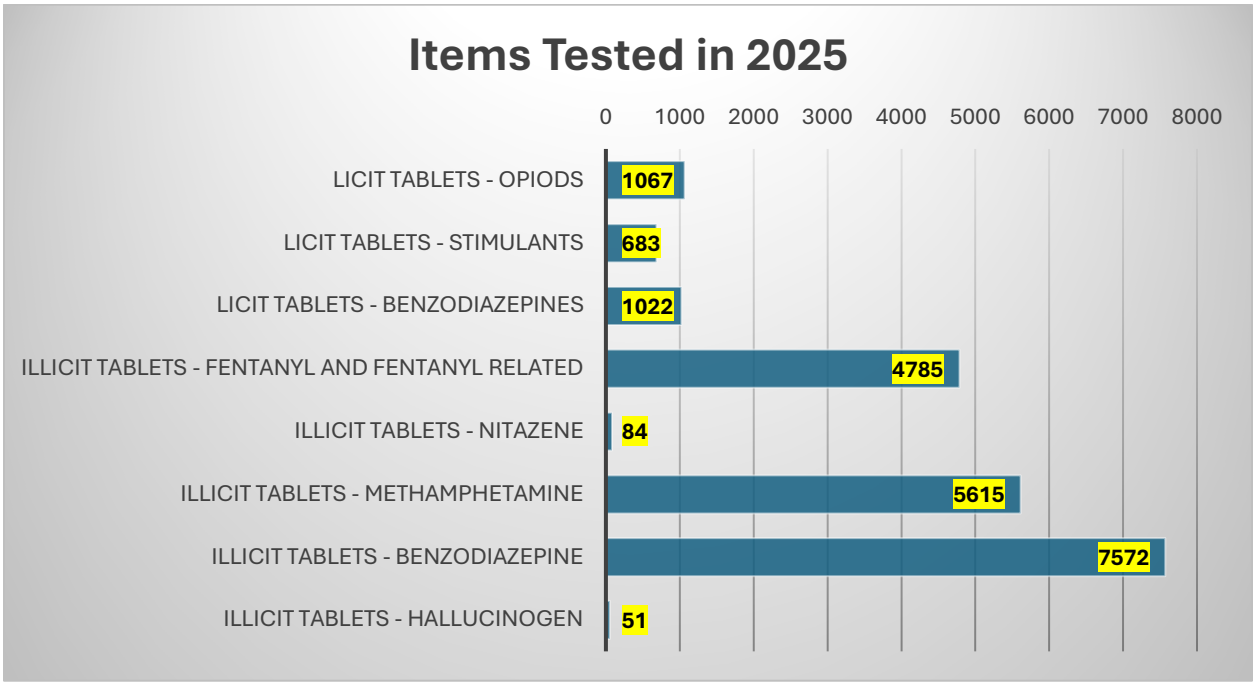


Figure 2

Toxicology

Staffing:

The Toxicology unit is currently staffed by a Chief of Toxicology, five toxicologists, and two toxicology assistants.

Duties:

The staff of the Toxicology unit analyze:

1. Postmortem biological specimens for volatiles, drugs, and other toxic substances affecting the manner and cause of death.

2. Biological specimens for ethyl alcohol and/or other drugs from driver's involved in suspected OVI offenses.

3. Biological specimens from victims of suspected drug facilitated crimes and from suspects and/or victims of other criminal cases.

2025 Statistics:

The Toxicology unit completed **2148 cases** in 2025. The average turnaround time for coroner cases for 2025 was **28.6 days**.

Figure 1: A chart of 2025 cases submitted, and cases completed and signed in 2025. OVI=operating a vehicle impaired. DFC=drug facilitated crime. Totals in the completed and signed category include cases that were submitted in 2024.

Figure 2: Represents the average 2025 coroner case turnaround time in days by month.

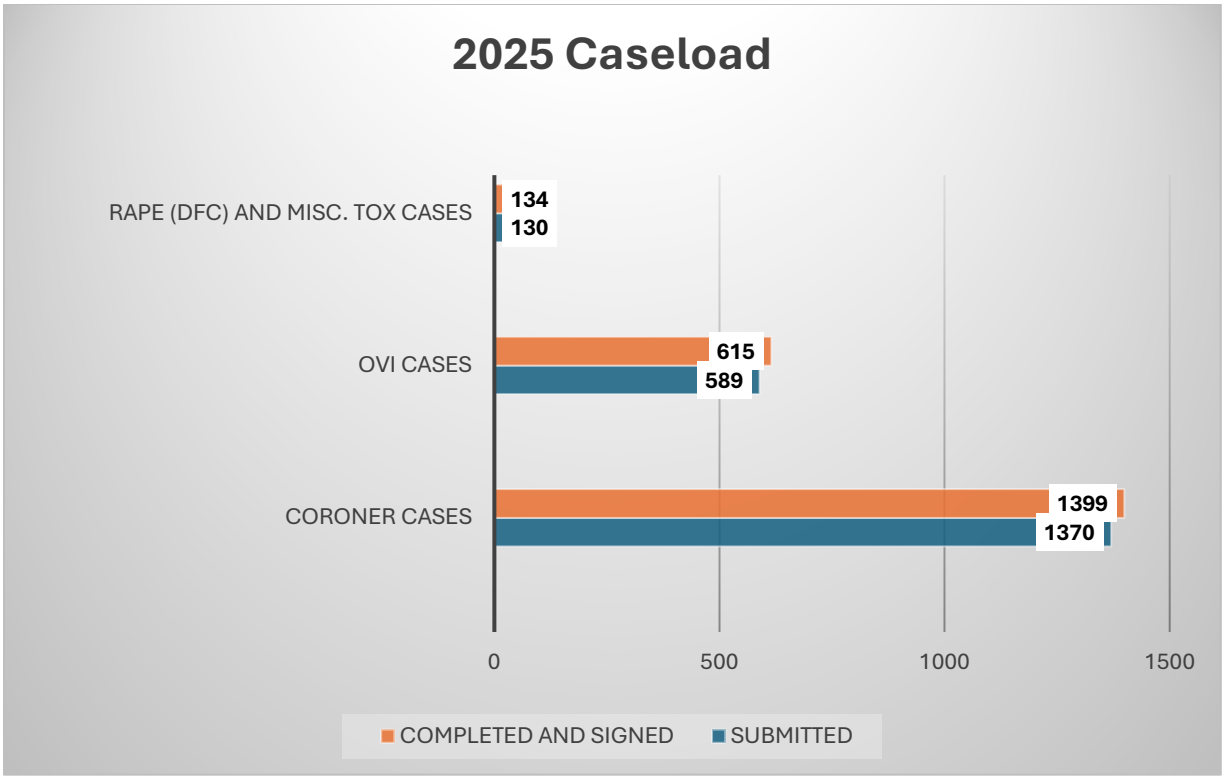


Figure 1

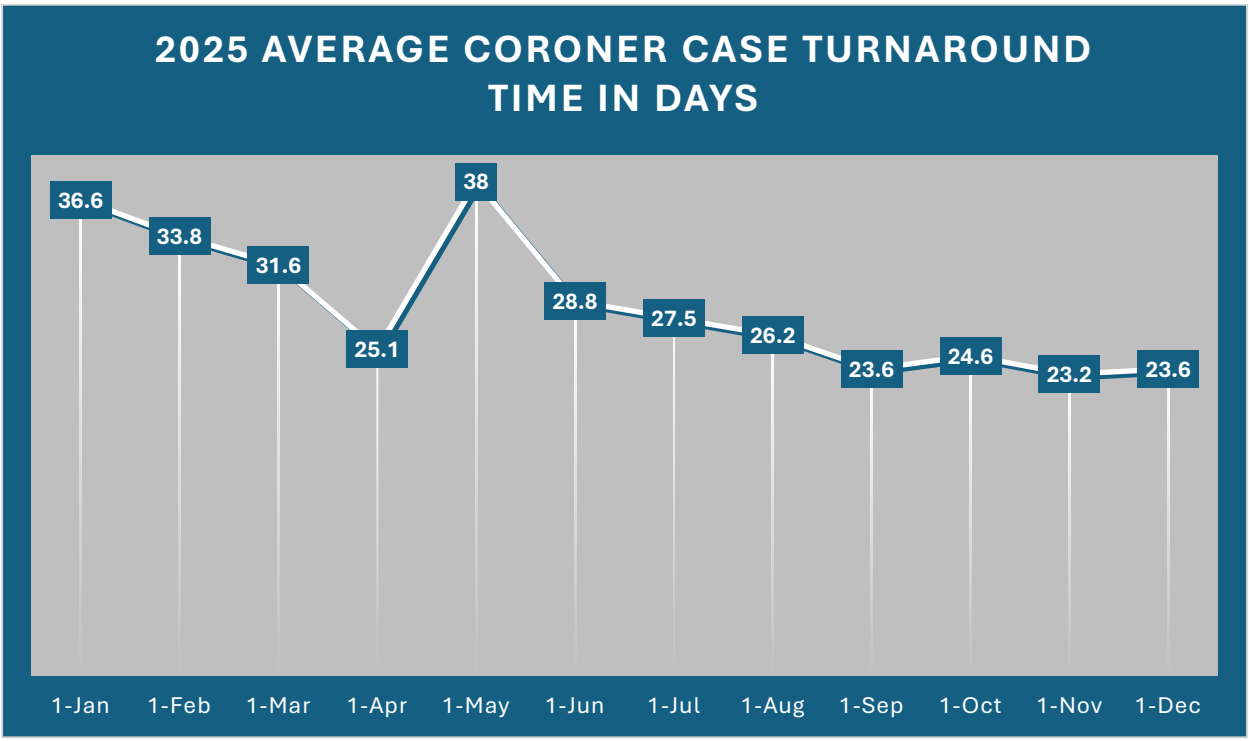


Figure 2

Forensic Biology/DNA

Staffing:

The Forensic Biology section is currently staffed by seven full-time analysts.

Duties:

The Forensic Biology/DNA Section uses technology and scientific processes to identify the presence of blood, semen, saliva, or urine. They use appropriate chemical and microscopic testing for determination of the type of biological material present.

Forensic DNA analysis is a multi-step process which involves extraction, quantitation, amplification, separation by capillary electrophoresis, and interpretation of sample DNA. The generated DNA forensic profiles are then compared to known specimens from victims or suspects or searched within the Combined DNA Index System (CODIS) database of crime scene samples and previously collected offenders and arrestees.

2025 Statistics:

The section **received 1430 cases in 2025**.

The section **completed 1337 cases in 2025**.

The cases completed in 2025 represented **24,105 examinations** performed on **6760 items**.

Figure 1: A chart of the 236 CODIS hits for 2025. An Offender is an individual who was previously convicted and was required to provide a DNA sample for inclusion in the CODIS database. An arrestee is an individual who has been arrested and was required to provide a DNA sample for inclusion in the CODIS database. A forensic hit is when two or more forensic samples submitted by casework laboratories match one another.

Figure 2: Tracks the backlog for a five-year period.

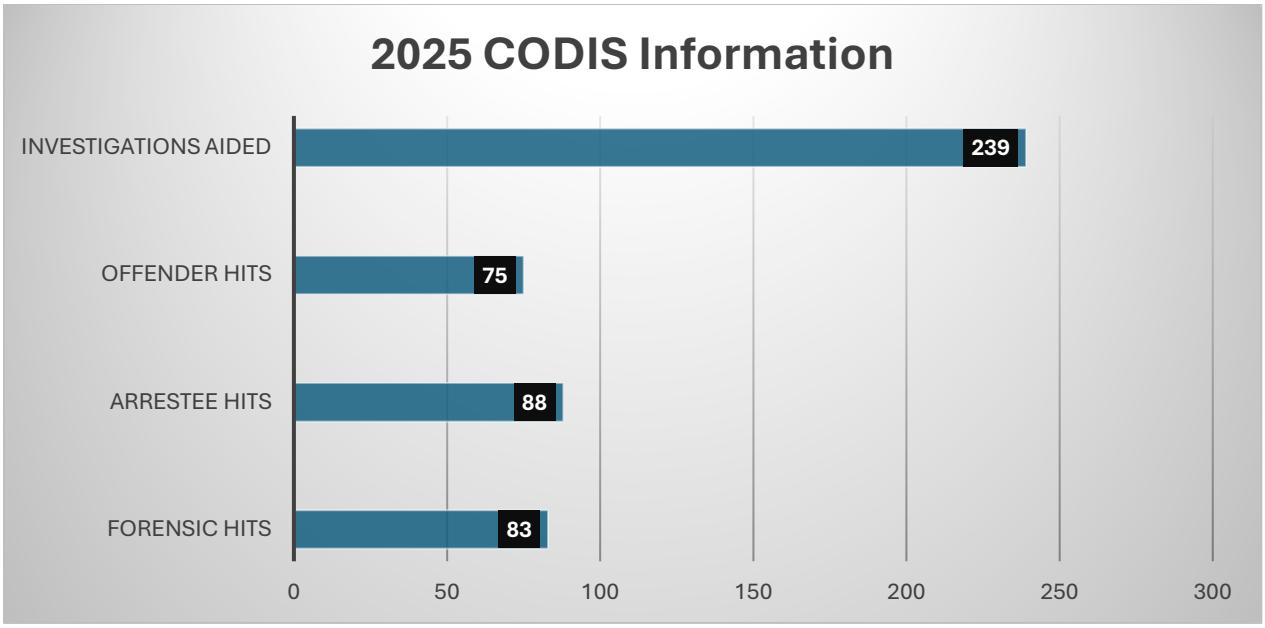


Figure 1

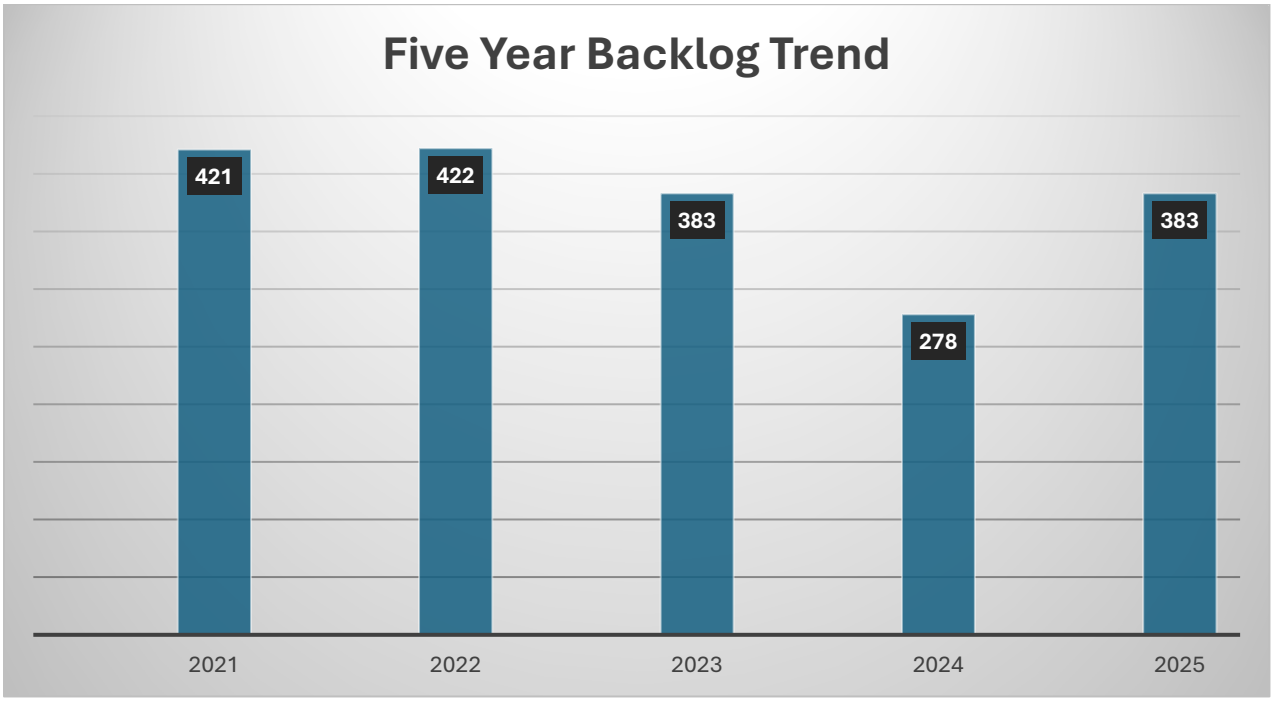


Figure 2

Trace Evidence

Staffing:

The Trace Evidence Section is currently staffed by two full-time analysts, one of which is currently still training in some sub-disciplines.

Duties:

Trace evidence is the minute transfer of materials based on Locard's Exchange principal theory. Trace evidence may provide a link between the suspect and victim, a victim and a scene, or the suspect and a scene.

The Trace Evidence Section examines an array of evidence including footwear and tire impressions, paint, glass, tape, hair, dye packs, chemical irritants, explosives, fibers, gunshot residue (GSR), ignitable liquids, and fracture matches.

2025 Statistics:

The Trace Evidence Section accepted **137 cases** in 2025. The section completed work on **145 cases** with **242 samples analyzed** in 2025.

Figure 1: Types of Cases worked in 2025.

Figure 2: Out of County Cases submitted vs Total Cases submitted for the last five years.

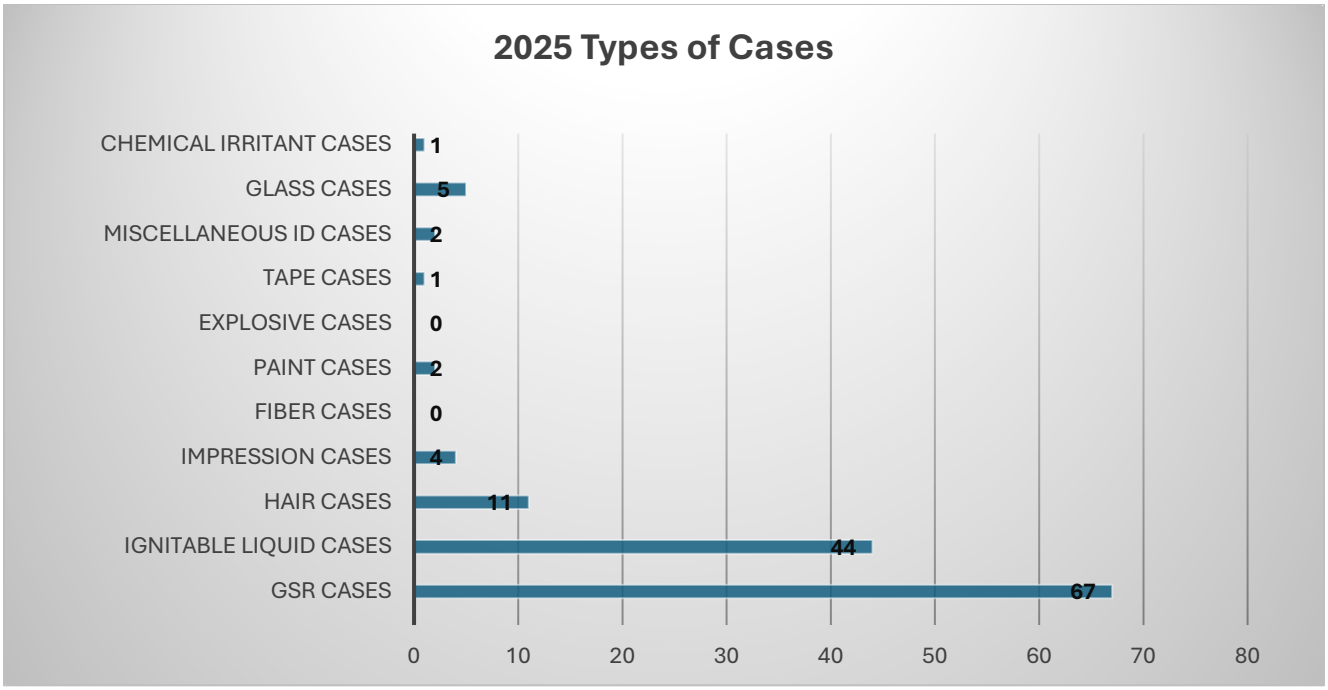


Figure 1

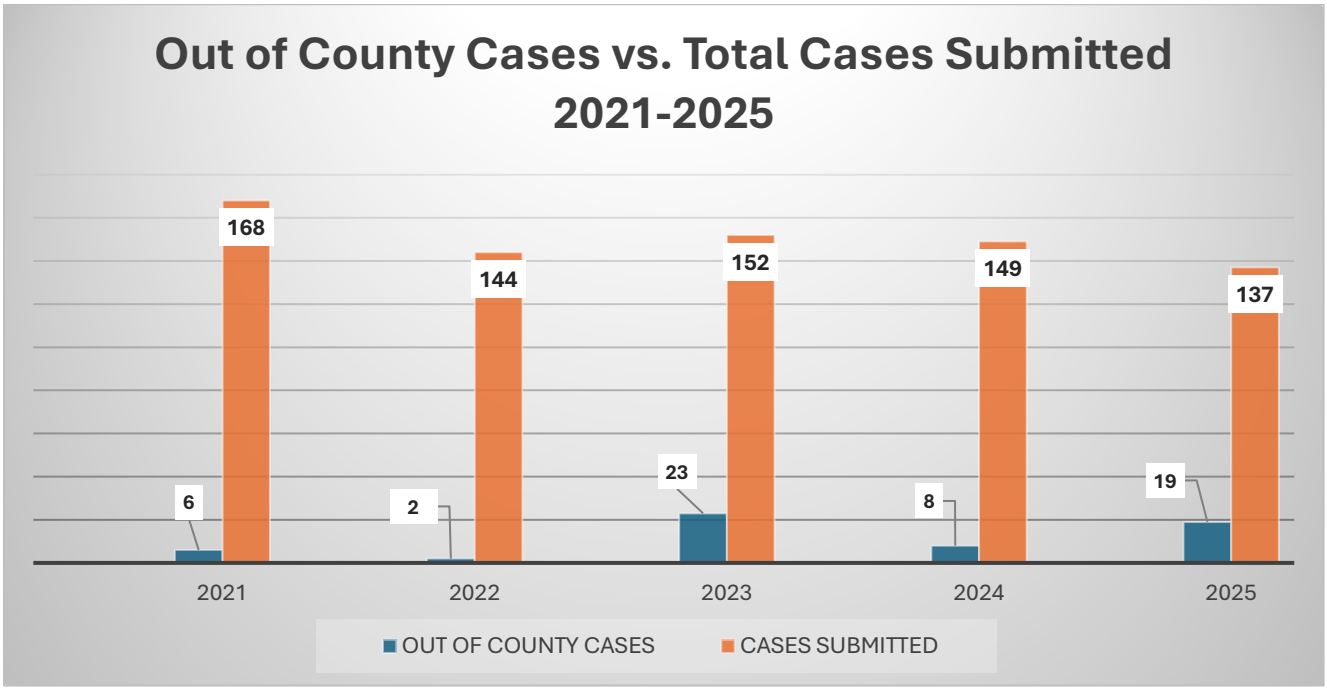


Figure 2

Firearms and Toolmarks

Staffing:

The Firearms and Toolmarks Section is currently staffed by three full-time analysts and one part-time analyst.

Duties:

The Firearms and Toolmarks Section conducts a wide variety of examinations. Using valid scientific procedures, they conduct safety and function testing on firearms, determine general rifling characteristics, perform serial number restoration, compare ammunition components to determine if they were fired in a specific firearm, and determine if a specific tool made a certain toolmark.

2025 Statistics:

The Firearms and Toolmarks Section accepted **193 cases** in 2025. They worked **327 cases** in 2025. At the end of 2024 the section had a backlog of **202 cases**. At the end of 2025 the section had a backlog of **73 cases**.

Figure 1: Types of analysis performed on the work completed in 2025.

Figure 2: Five-year summary of cases worked, cases submitted, and backlog.

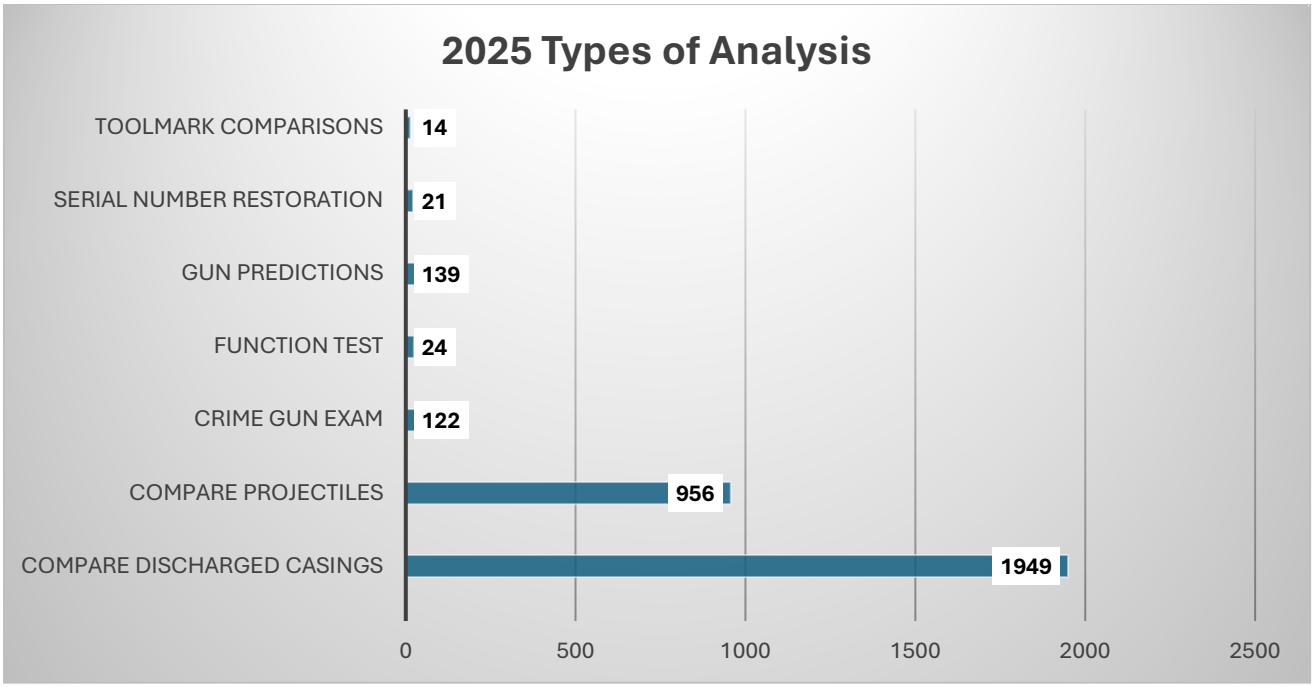


Figure 1

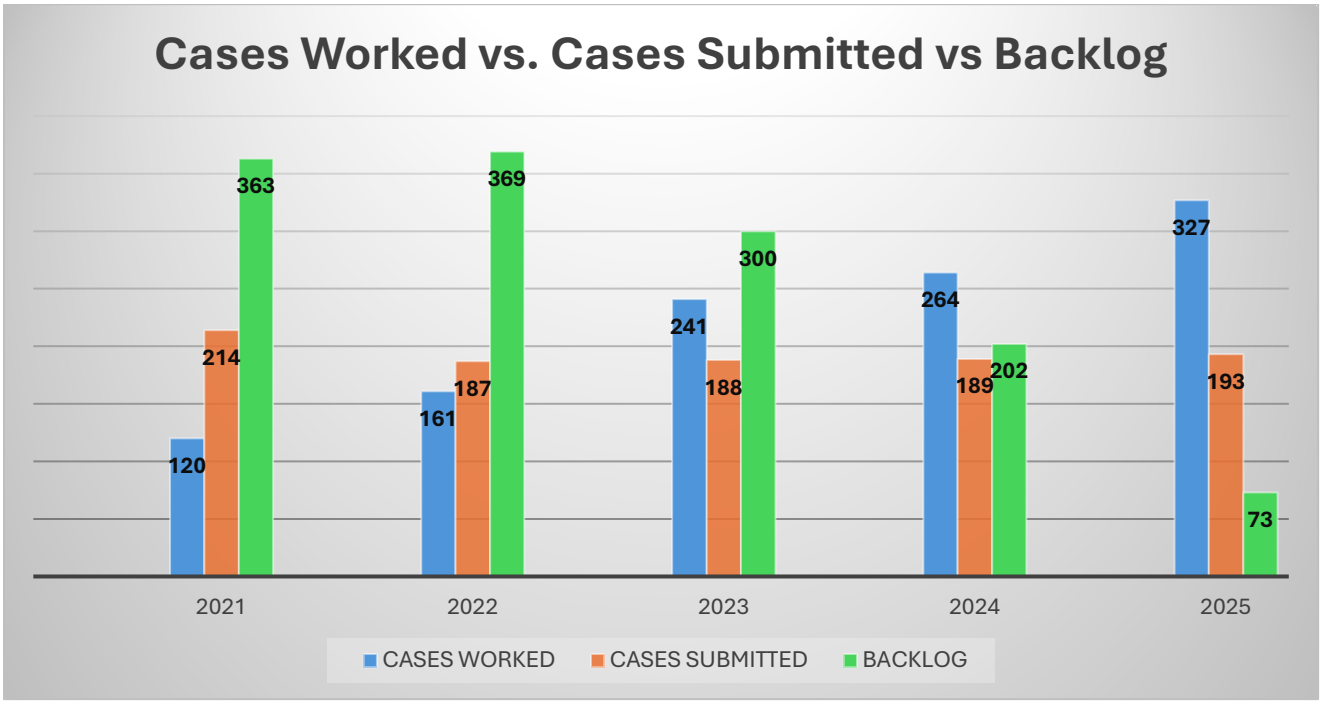


Figure 2

Projections/Goals for the Laboratory in 2026:

The laboratory's management and professional staff will continue to focus on an environment of continuous improvement -through training opportunities, collaboration and communication, new technology, and supporting the health and wellness of our staff. Below are some of the 2026 goals/projections for the laboratory sections.

General Laboratory:

The design of the new FIMS (Forensic Information Management System) continued in 2025. The new system is scheduled to go live in 2026. This system should be more efficient in accepting evidence. It will also notify agencies when casework is finished and allow customers access to laboratory reports. The laboratory will undergo a desk audit from our accrediting body (ANAB) in March of 2026.

Drug Chemistry:

The Section remains committed to maintaining a case turnaround time of 14–21 days. During this reporting period, the gas chromatograph–flame ionization detector (GC-FID), used for alcohol analysis, was successfully replaced to ensure continued reliability and performance. The Section will continue validation efforts for the liquid chromatography/tandem mass spectrometer (LC/MS/MS) and will initiate limit of detection studies for the gas chromatograph/mass spectrometers (GC/MS) to further evaluate method sensitivity and accuracy. Additionally, the Section has been advancing the implementation of enhanced quality control measures for in-house libraries utilized with its instrumentation.

Toxicology:

The section is committed to reducing their average turnaround time for completing and signing out coroner cases to under 25-30 days. They will also continue to develop and validate more in-house methods and procedures to reduce the number of send-outs. The section will also welcome a new Chief of Toxicology, Dr. Samual Kleinman, who comes to us from the New Mexico Department of Health, Scientific Laboratory Division, Toxicology Bureau. The section will be hosting the Midwest Association for Toxicology and Therapeutic Drug Monitoring (MATT) meeting here in Blue Ash, OH in March.

Forensic Biology:

The section continued to reduce the number of backlog cases throughout 2025 and will look to continue that trend in 2026. In 2026 the section will validate a tissue lyser instrument used to pulverize bone and teeth samples for downstream DNA analysis. This instrument will be used for cases involving unidentified remains.

Trace Evidence:

The trace section continues to work cases in a variety of sub-disciplines. They have taken on several new agencies in 2025 which include: Kettering PD, Brown County Sheriff's Office, Auglaize County Sheriff's Office, Union Township PD, Darke County Sheriff's Office, Columbus PD, Ohio Department of Natural Resources, Ohio State Highway Patrol, Noble County Sheriff's Office, Clermont County Sheriff's Office, Warren County Sheriff's Office, Rush County Sheriff's Office, Ripley County Sherriff's Office, and the Bahamas. They continue to help other laboratories by performing technical reviews for Lake County Crime Laboratory and the Arkansas State Crime Laboratory. One of the trace analysts has become proficient in tape examinations and is currently training in the discipline of paint. The senior analyst continues to be involved in the ignitable liquids, explosives, and GSR

subcommittee (ILEGSR SC) of the Organizational Scientific Area Committee (OSAC).

Firearms and Toolmarks:

In 2025 the Firearms and Toolmarks Section saw reduction in staffing by two full time analysts. By the end of 2025, the Section reduced the backlog to 73 cases. The staff are now working on cases as they are submitted to the laboratory.