Division of Forensic Science
2025 Annual Report

June 8, 2026

State of Delaware
Department of Safety and Homeland Security
200 South Adams Street
Wilmington, DE 19801

John Evans, Director

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DEPARTMENT OF SAFETY AND HOMELAND SECURITY
OFFICE OF THE SECRETARY
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DOVER, DELAWARE 19903-0818
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The Honorable Matthew S. Meyer
Governor

The Honorable Joshua A. Bushweller
Cabinet Secretary

May 29, 2026

It is my privilege to present the 2025 Annual Report of the Delaware Division of Forensic Science (DFS), whose work is essential to the safety, health, and well-being of our state.

This report highlights the many ways DFS continues to serve as a trusted partner to law enforcement, public health officials, and the criminal justice system. The Division maintained all national accreditation standards while expanding forensic testing capabilities, enhancing the detection of emerging drugs and cannabinoids, strengthening statewide data-sharing partnerships, and advancing preparedness efforts to address evolving public safety challenges.

The Division achieved significant successes in 2025. The Medical Examiner Unit reported a continued decline in overdose deaths, which fell 7 percent from the prior year, while the Toxicology Unit expanded its analytical capabilities to continue identifying emerging substances such as medetomidine and xylazine. The DNA Unit managed an increased caseload while reducing turnaround times by 17 percent despite staffing challenges. Likewise, the Forensic Chemistry Unit maintained exceptional efficiency, achieving an average controlled substances case turnaround time of just nine days. Throughout the year, DFS also remained committed to disaster preparedness, community outreach, and educational opportunities that inspire the next generation of forensic science professionals.

These accomplishments would not be possible without the dedication and expertise of the forensic scientists, investigators, technicians, and support staff who serve Delaware every day. I extend my sincere gratitude to the professionals of the Division of Forensic Science and to the many local, state, and federal partners whose collaboration strengthens the Division's mission.

As the challenges facing public safety continue to evolve, Delaware remains well served by the expertise, innovation, and professionalism of the men and women of DFS. Their work—often unseen by the public—helps deliver justice, supports informed public health decisions, and strengthens the safety and security of communities across our state. I am proud of their accomplishments and confident they will continue to meet the needs of Delawareans with excellence in the years ahead.

Sincerely,

Joshua A. Bushweller, Secretary
Delaware Department of Safety and Homeland Security

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To My Fellow Delawareans:

On behalf of the dedicated personnel of the Division of Forensic Science (DFS), I am happy to present the 2025 Annual Report, which highlights the outstanding work and critical role that the DFS plays in the criminal justice process in Delaware.

The mission of the DFS is to provide the most reliable scientific analysis of evidence for the administration of justice. Sound and timely pathology and forensic science services are provided for the justice system, driven by crimes committed and deaths occurring in the State of Delaware.

The organizational structure of the Division is a collaborative model where each discipline is equally invested in the overall success of the Division. A stratified model of accountability is used, where each team member has a specific role toward meeting the overall mission. I am proud to report that the DFS continued to meet the mission in 2025 despite any challenges presented throughout the year, which is a testament to the commitment and professionalism of the team at DFS.

By continuing to meet accreditation standards and certifications, the DFS maintains the highest scientific standards and ensures both organizational and individual integrity. The work ethic of the employees of the DFS is strong and we hold true to our core values of Integrity, Honesty, Thoroughness, Timeliness and Professionalism.

The DFS recognizes the significance of data sharing and works together with the Department of Health & Social Services, the Division of Public Health, the Department of Justice, the Delaware Information and Analysis Center, law enforcement, and federal partners to combat the ongoing opioid epidemic and any other public health issues.

The Division continues to expand its interface with the Delaware academic community by promoting forensic internship programs and participating in quality data collection and research. The Division firmly believes these efforts will promote interest in forensic science disciplines among Delaware students and lead to stronger information sharing projects. These outreach efforts, coupled with data sharing and collaboration led to the Division being established as a key contributor across state agencies for the development of policies and initiatives to safeguard the health and safety of all Delawareans.

In 2025, the Division continued to pursue both state funding and federal grant opportunities, which allowed the DFS to expand its data sharing capacity by enhancing testing capabilities. Medetomidine, an emerging drug in Delaware, was added to the postmortem testing capability, and an expanded cannabinoid testing panel was validated. I would like to thank the Criminal Justice Council for their continued support in providing grant funding in 2025, which provided much-needed supplies, equipment, and training opportunities for the valued staff at DFS. Also in 2025, we enjoyed support from our partners at the CDC

and the Division of Public Health through the Overdose Data to Action (OD2A) grant, which provided funding for additional supplies and equipment.

With the support of Governor Matt Meyer and the General Assembly, planning continues to construct a new state-of-the-art Forensic Science facility on the grounds of the Emily P. Bissell Hospital in New Castle County. The new facility will replace the current outdated and undersized building and will provide space needed for additional lab instrumentation and staffing to support the ever-increasing demands for service. I look forward to the continued support of Governor Matt Meyer and the General Assembly toward continuing the positive momentum of the Division of Forensic Science in 2026.

I take great pride in the hard work and dedication of the men and women of the Division of Forensic Science and in their continued focus on providing the level of service that our customers and stakeholders deserve and expect. I remain confident that our staff will meet any challenge to fulfill our mission.

Sincerely,

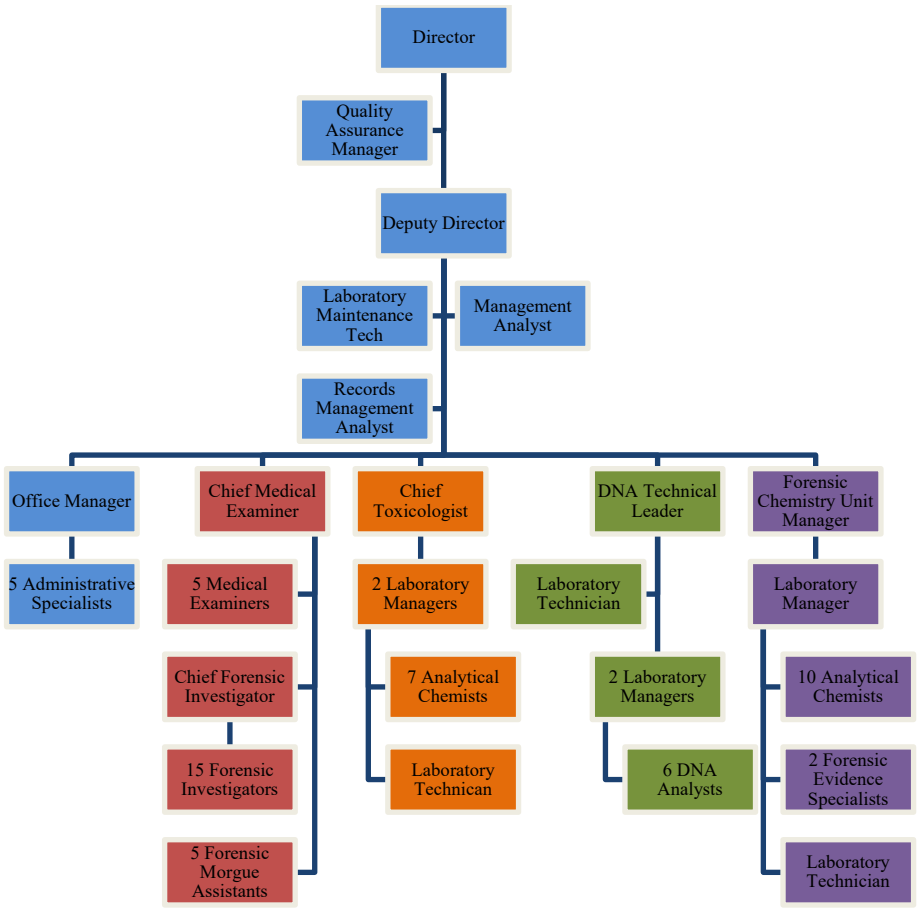
John R. Evans, Director

The Division of Forensic Science

The Division of Forensic Science is composed of four units including the Medical Examiner, Toxicology, DNA, and Forensic Chemistry. It is the mission of the Division of Forensic Science to provide the most reliable scientific analysis of evidence for the administration of justice. The Medical Examiner Unit serves the State of Delaware with objective medicolegal death investigations in order to provide accurate death certification that complies with the standards set by the National Association of Medical Examiners (NAME) and the Delaware statutes. The Toxicology Unit performs analyses on biological specimens submitted by the medical examiner and Delaware law enforcement agencies for the presence (or absence) of volatiles and drugs. The Toxicology Unit is committed to providing state-of-the-art, timely forensic analyses that comply with the standards set by ISO/IEC 17025:2017 and the American Board of Forensic Toxicology (ABFT). The DNA Unit provides Delaware law enforcement agencies with a forensic DNA testing program that complies with the standards set by the DNA FBI Quality Assurance Standards and ISO/IEC 17025:2017. The Forensic Chemistry Unit tests physical evidence seized by Delaware law enforcement agencies, for the identification of controlled substances and fire debris analysis. Like the other Laboratory Units, the Forensic Chemistry Unit is committed to providing state-of-the-art, timely forensic analyses that comply with the standards set by ISO/IEC 17025:2017.

Division of Forensic Science, Wilmington, DE

During 2025, the DFS continued to enhance operations and administration, embracing every challenge as an opportunity to improve. The DFS has maintained accreditation with the ANSI National Accreditation Board (ANAB). Additionally, the Medical Examiner Unit continues to be accredited through the National Association of Medical Examiners (NAME) and the Toxicology Unit meets the standards established by the American Board of Forensic Toxicology (ABFT). The dedicated staff at the DFS continues to demonstrate a professional commitment to providing accurate, timely, and responsive forensic science service to all members of the criminal justice community in Delaware.



2025 DFS Organizational Chart. (Note that vacant positions are included in totals.)

Divisional Initiatives, Collaboration, and Information Sharing

Overview

The Division of Forensic Science believes that sharing of data and DFS information adds value to multiple governmental and academic initiatives. Working together across agencies, federal and state governments, and other stakeholder organizations supports the health and safety of the citizens and visitors of Delaware. Currently, DFS participates on two statewide commissions related to child death and overdose death, two CDC-funded projects, the Delaware Drug Monitoring Initiative, and several other forensic data-driven projects with both our public health and law enforcement partners.

To forward the mission, the Division is continuously working on a comprehensive reporting system aimed at producing standardized information to key government and private sector stakeholders statewide. This work is identified as the Delaware Forensic Science Reporting Project (DFSRP).

National Violent Death Reporting System

Created by the Centers for Disease Control and Prevention (CDC) in 2002, the National Violent Death Reporting System captures extensive information about incidents, such as death certificates, mental health history, life stressors, job information, weapons used, victims and suspects, incident location, and other characteristics, to provide a clearer understanding of violent deaths. This surveillance system, implemented in all 50 states, the District of Columbia, and Puerto Rico, links the "who, when, where and how" to inform decision makers and develop prevention efforts to reduce violent deaths in our communities.

DFS remains a key partner in the National Violent Death Reporting System (NVDRS) and the Delaware Violent Death Reporting System (DVDRS) by providing autopsy and toxicology information on homicide and suicide deaths in Delaware. This work requires abstractors to collect key data from the DFS for the purposes of supporting effective prevention strategies to reduce violent deaths in Delaware.

Centers for Disease Control Biorepository Program

Funded by the National Institutes of Health (NIH) and the Centers for Disease Control and Prevention (CDC), The Sudden Death in the Young Case Registry (SDY) gathers information to learn about sudden death in children and find ways to prevent future fatalities. Delaware is one of 13 participating states in the project and collaborates with the staff of the Child Death Review Commission to identify causes of sudden death in our Delaware children. A DNA sample is collected by the Medical Examiner Unit and the genetic information is used by researchers to identify causes of death in the hopes of preventing similar deaths in the future, as well as provide valuable information for the health and well-being of surviving siblings.

Delaware Drug Monitoring Initiative

The Division of Forensic Science collaborates with the Office of Emergency Medical Services (OEMS), the Delaware Information & Analysis Center (DIAC) and the Division of Substance Abuse and Mental Health (DSAMH) to produce a report that is being distributed quarterly to stakeholders both statewide and federally.

The Delaware Drug Monitoring Initiative (DMI) utilizes data derived from the DFS, Delaware Emergency Medical Reporting System (DEMRS), Delaware Information and Analysis Center (DIAC), and the Delaware Division of Substance Abuse and Mental Health (DSAMH) to be used for situational awareness. The purpose of this initiative is to share consistent, actionable information to address the issues related to the drug epidemic affecting Delaware. The data provided in this report is aimed at assisting multiple agencies across Delaware in an effort to identify individuals at risk of substance use

disorder and/or overdose. These efforts will help inform both law enforcement and public health officials as they work to identify additional treatment needs or programs. While all the data is housed under the respective agencies, the DMI report is created collaboratively within the DIAC for broader reach to key stakeholders. This work has opened the door for collaborative reporting statewide.

Disaster Preparation

The statewide Mass Fatality Plan is an ongoing effort in collaboration with the Division of Public Health to be prepared for a disaster. The Division of Forensic Science continues to participate in table-top disaster drills and on-scene disaster drills. The purpose of these exercises is to identify areas of strength and weakness, and to test the Mass Fatality Plan before the occurrence of a state disaster. As part of this work, DFS has developed internal Critical Incident Standard Operating Guidelines (SOG). These guidelines provide DFS staff with a framework for emergency operations that falls within the scope of other statewide disaster plans.

The second step of disaster preparation is the development of a statewide Family Assistance Center (FAC) plan. This plan is being modeled after the National Transportation Safety Board efforts to promote a centralized location for multiple agencies to assist families during a disaster.

Overall Reporting & Collaboration

Data collected by the DFS is used in collaboration with other agencies such as Department of Health and Social Services, the Division of Public Health, the Division of Substance Abuse and Mental Health (DSAMH), the Department of Justice, DIAC, and other law enforcement organizations to promote the health and safety of the citizens of Delaware. In 2025, the DFS continued to expand its data sharing capacity by providing information regarding dangerous fentalogues and additives such as xylazine, nitazine, and medetomidine.

The Division has also increased our academic interface with the Delaware academic community by opening our doors to tours, promoting forensic job shadow programs, and participating in quality data collection and research. The Division firmly believes these efforts will promote interest in forensic science disciplines among Delaware students and lead to stronger information sharing projects.

Overall, these external relationships have two goals: to educate stakeholders and collaborators on the principles and processes of the DFS, and to establish the Division as a key contributor across state agencies for the development of policies and initiatives to safeguard the health and safety of all Delawareans.

Community Engagement

One of the goals of the Division is to engage community partners by providing informational resources and encouraging scientific learning. Community outreach this year included lectures and tours given to both college and high school level students, including Odyssey Charter, Newark Charter, Salem Community College, and Delaware State University. Job shadow opportunities across all of the units at the DFS continue to be offered to college level students, resulting in over 20 successful opportunities in 2025. The professional staff of the Division of Forensic Science is committed to promoting scientific knowledge and community collaborations.

Assessment, Accreditation, and Quality Assurance

Accreditation is a key component of the quality assurance program at the DFS. To be accredited means that the various units within the DFS are routinely inspected by outside organizations who ensure that the policies, procedures, and/or practices within the Division adhere to strict national or international standards. Standards followed by the DFS include those set forth by the International Organization for Standardization (ISO), the American National Standards Institute National Accreditation Board (ANAB), the American Board of Forensic Toxicology (ABFT), the National Association of Medical Examiners (NAME), and the Quality Assurance Standards (QAS) established by the Federal Bureau of Investigation (FBI).

ISO 17025:2017 Accreditation

The International Organization for Standardization is the world's largest developer and publisher of international standards. Laboratories use ISO 17025 to implement a quality system aimed at improving their ability to consistently produce valid results. Since the standard is about competence, accreditation is a formal recognition of the demonstration of that competence.

The DFS was originally ISO 17025 accredited in 2004 and has continually achieved the highest level of quality standard competency for testing with annual re-accreditation. The current ISO 17025 accreditation was provided by ANAB, which also publishes additional standards that must be adhered to for accreditation, and the DFS remains in good standing.

American Board of Forensic Toxicology Accreditation

ABFT is dedicated to enhancing and maintaining standards of practice in the field of forensic toxicology.

The Toxicology Unit at the DFS is accredited to the ABFT standards, provided by ANAB and the DFS remains in good standing.

National Association of Medical Examiners Accreditation

The purpose of the NAME accreditation standards is to improve the quality of the medicolegal investigation of deaths in this country. NAME accreditation is an endorsement by NAME that the Division provides an adequate environment for medical examiners to practice their profession and offers reasonable assurances that the ME office serves its jurisdiction well.

The DFS has been NAME accredited since 1980 and continues to be in good standing with this organization.

FBI Quality Assurance Standards

The FBI's Quality Assurance Standards (FBI QAS) describe the requirements that laboratories performing forensic DNA testing or utilizing the Combined DNA Index System (CODIS) shall follow to ensure the quality and integrity of the data generated by the laboratory. The DFS has been compliant with the FBI QAS since 1997.

Medical Examiner Unit

Overview

The duties of death investigation for the State of Delaware fall to the Medical Examiner Unit (MEU), led by the Chief Medical Examiner (ME), Assistant MEs, Forensic Morgue Assistants, and Forensic Investigators. This Unit is responsible for investigating all suspicious and violent deaths in the State and performs postmortem examinations on cases that fall under its jurisdiction. The Unit operates out of three locations: the main office in Wilmington, the Tobin Building on the Stockley campus in Georgetown, and a satellite office in Dover (Kent County). The MEU maintained full accreditation with the National Association of Medical Examiners.

In 2025 the MEU investigated 3678 deaths. Of those deaths, the MEU accepted jurisdiction for and certified 1523 (42%) of the deaths investigated. The deaths certified by the MEU represent 13.96% of all deaths registered in the State of Delaware in 2025. In 2025, the deaths from drug intoxication saw a slight decrease from the previous year. The accidental deaths from drug intoxication decreased by 7% from 338 deaths in 2024 to 314 deaths in 2025.

	2021	2022	2023	2024	2025
Autopsies	920	878	940	811	770
Inspections	374	412	327	313	335
Total Examinations	**1294**	**1290**	**1267**	**1124**	**1105**
Inquiries*	485	470	435	355	418
Total Deaths Certified	**1779**	**1760**	**1702**	**1479**	**1523**
Non-Jurisdiction Investigations*	1661	1874	1808	2000	2151
Total Medical Death Investigations	**3440**	**3634**	**3510**	**3479**	**3674**
In Custody Deaths			27	23	23

*Note that inquiries are cases under the ME jurisdiction which did not require an examination and non-jurisdiction cases are investigated but determined not to be under ME jurisdiction.

The MEU reviews and approves all requests for cremations for decedents who died in Delaware. In 2025, the MEU reviewed 7040 requests for cremation.

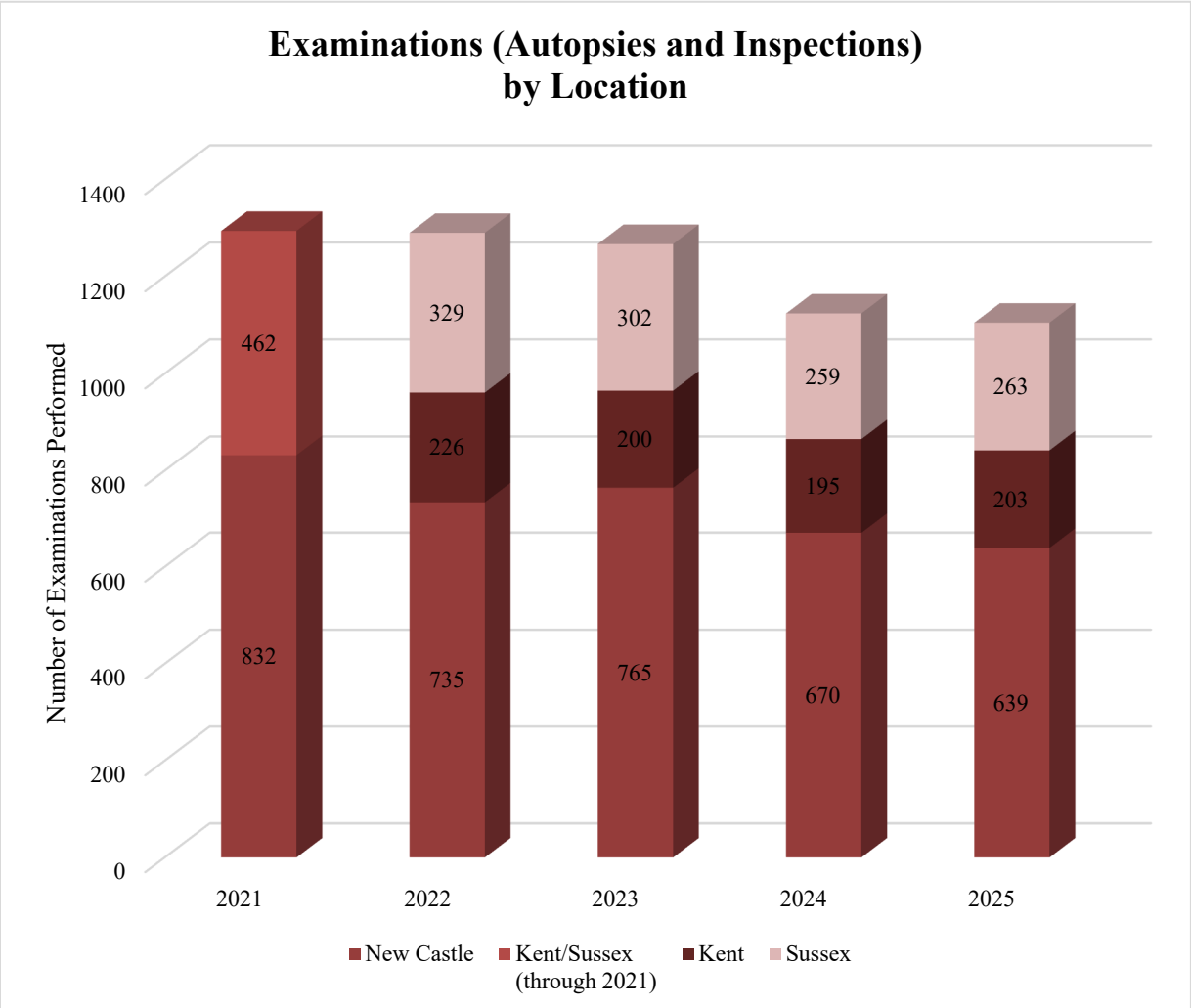
The Medical Examiner collaborates with the Gift of Life Organ Donor Program to approve organ and tissue donations in Delaware. In 2025 the DFS-MEU approved donations from 312 organs and tissue donations. Organs procured included heart, liver, kidneys, lungs, and pancreas. Tissues procured included cornea, skin, long bones, heart valves, and veins.

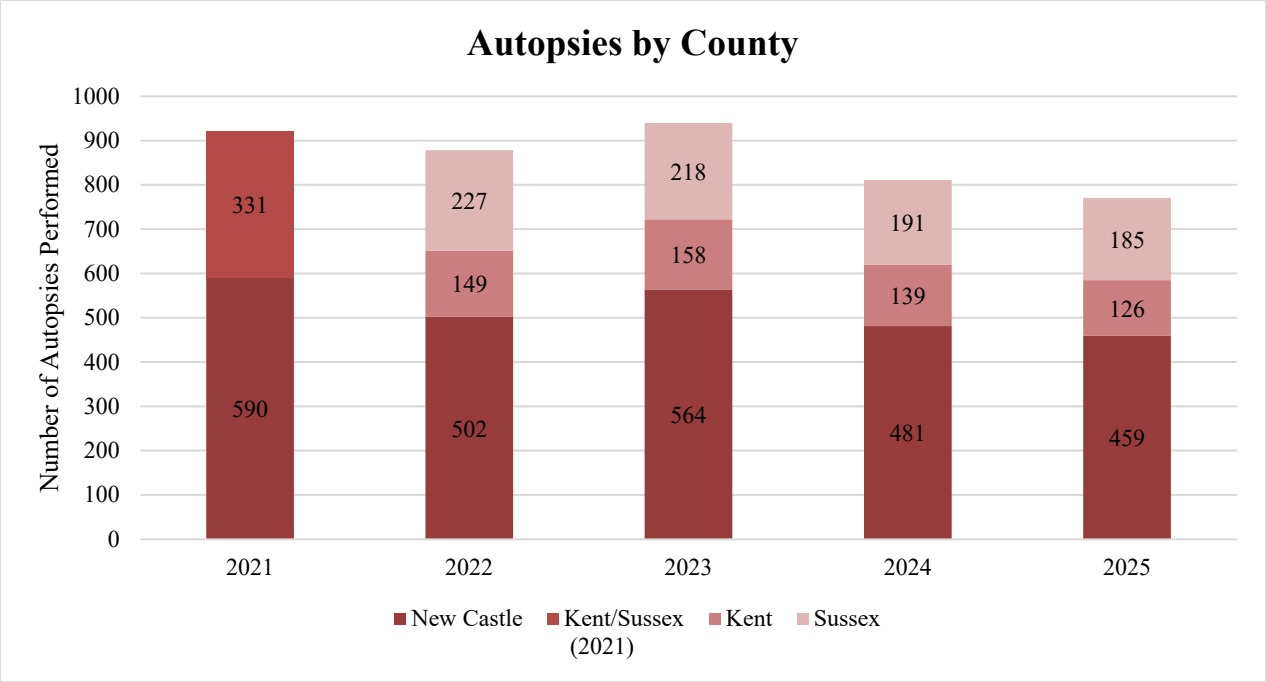
Partners

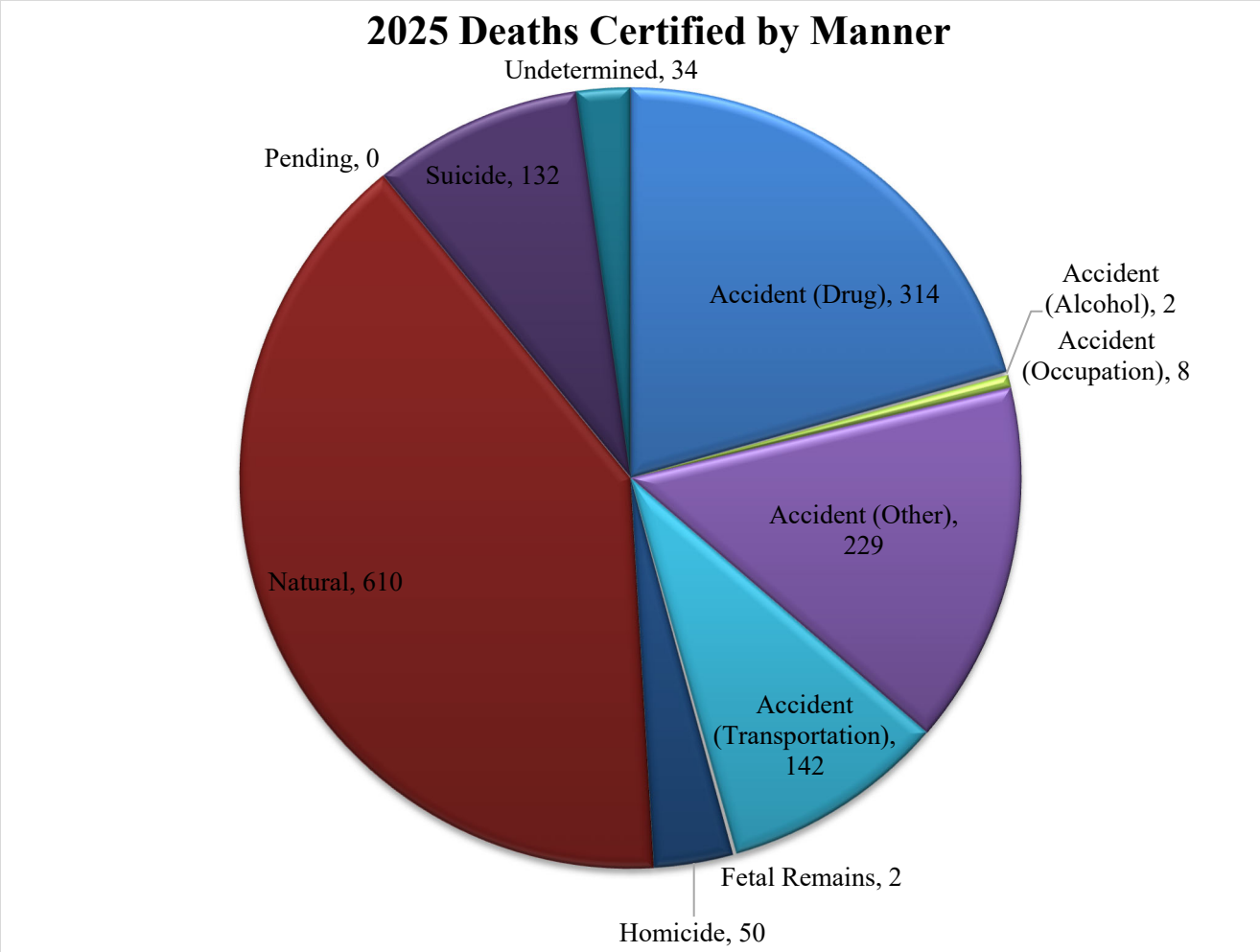
The MEU would not be able to accomplish our mission without the support of the Department of Safety and Homeland Security and the Delaware General Assembly. In addition, it is important to note the many agencies who assist in providing services to the MEU. These agencies include Delaware law enforcement agencies, the Attorney General's Office, Fleet Services, Office of the Child Advocate, the staff of all our Delaware hospitals, the Delaware Funeral Directors Association, the Gift of Life Donor Program, the Office of Vital Statistics, and all the funeral homes and health care practices that work with the Division. The MEU and Division value our relationships with all these agencies.

Data

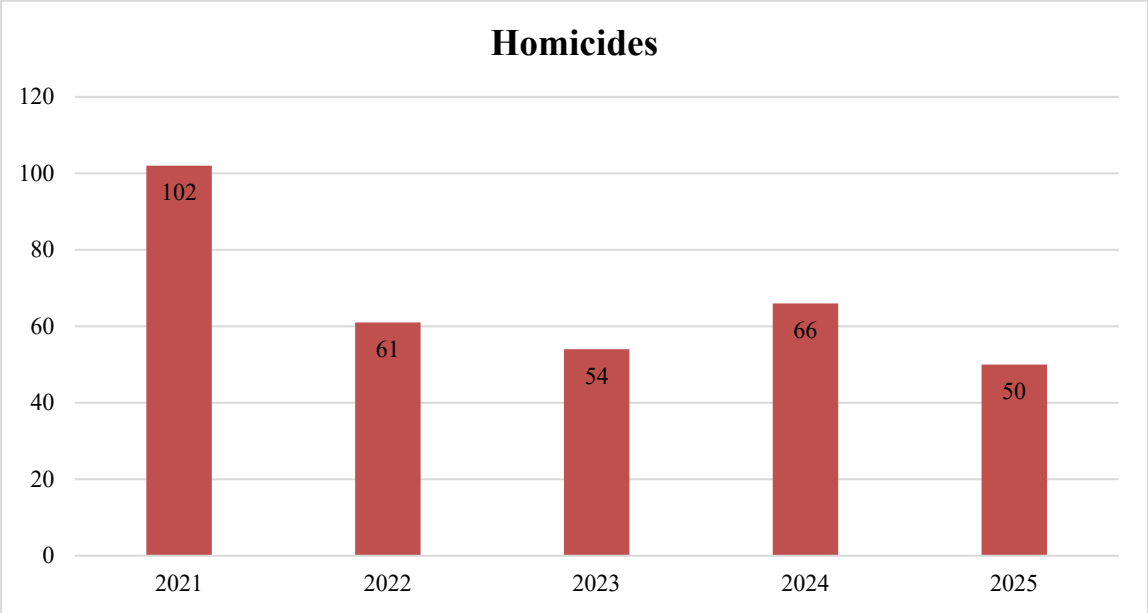
Cases Reviewed

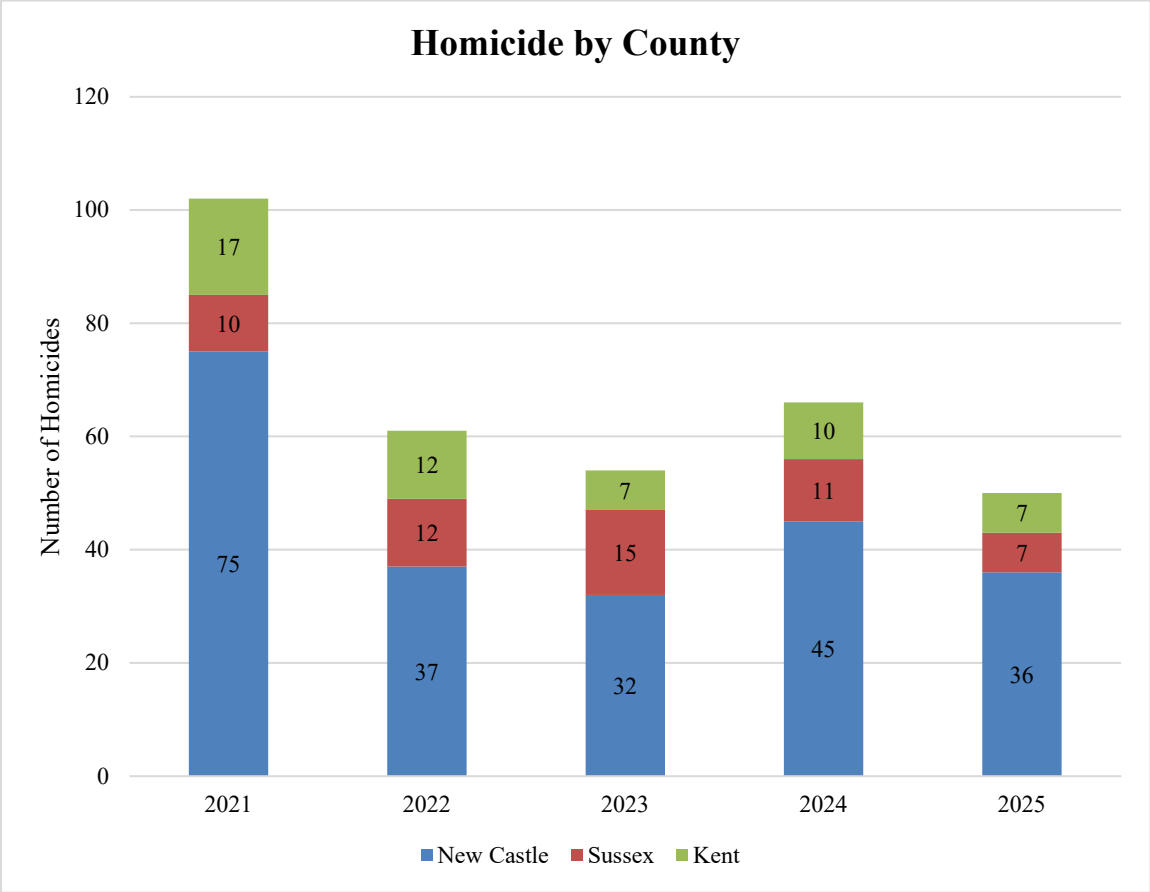


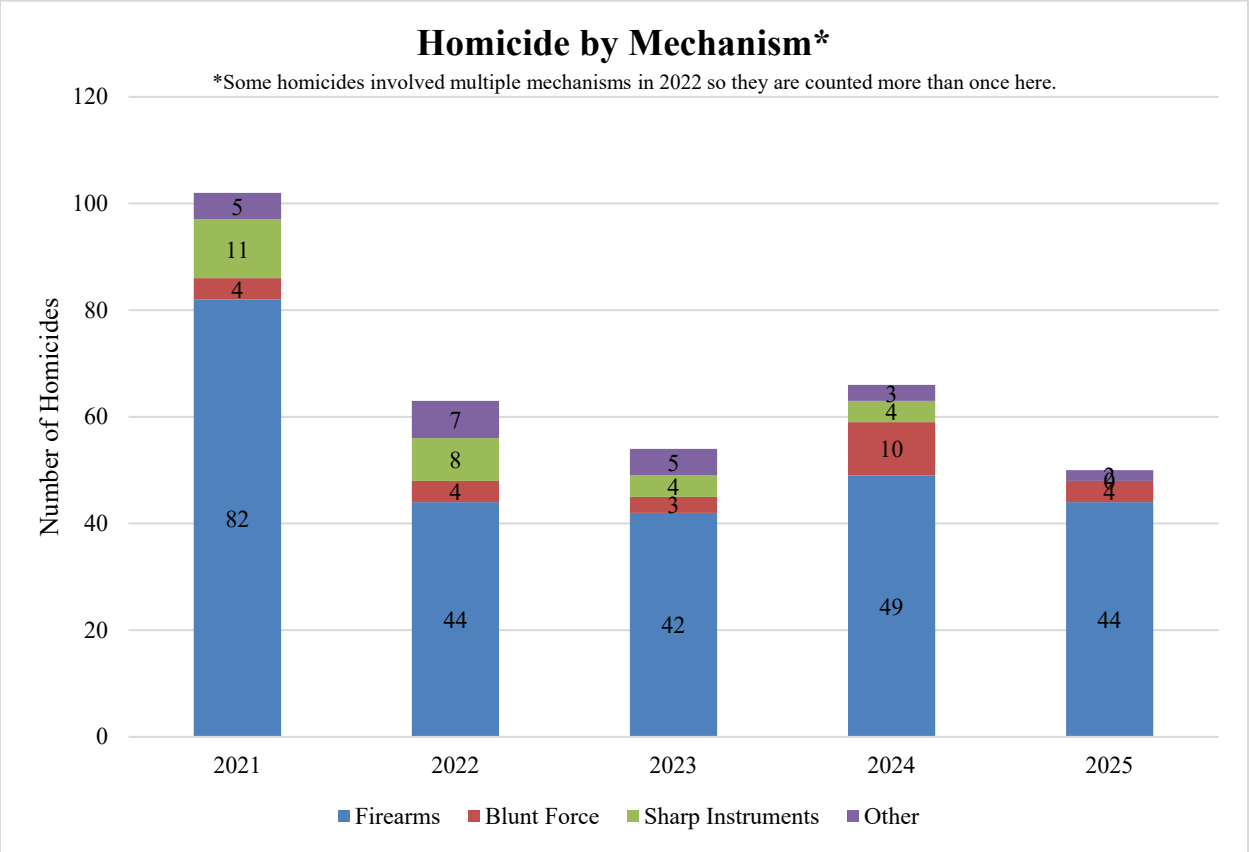

Autopsies by County
Number of Autopsies Performed
1000
900
800
700
600
500
400
300
200
100
0
331
590
227
149
502
218
158
564
191
139
481
185
126
459
2021
2022
2023
2024
2025
New Castle
Kent/Sussex (2021)
Kent
Sussex

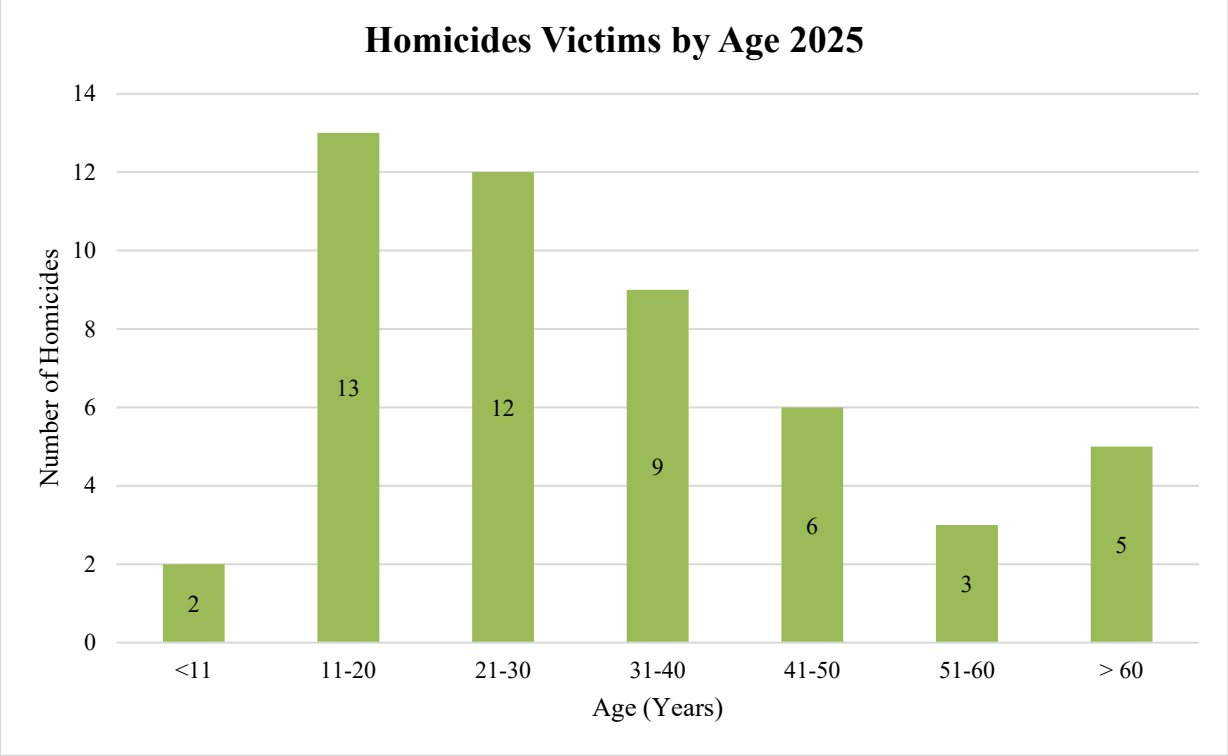

2025 Deaths Certified by Manner
Undetermined, 34
Pending, 0
Suicide, 132
Accident (Drug), 314
Accident (Alcohol), 2
Accident (Occupation), 8
Accident (Other), 229
Natural, 610
Accident (Transportation), 142
Fetal Remains, 2
Homicide, 50

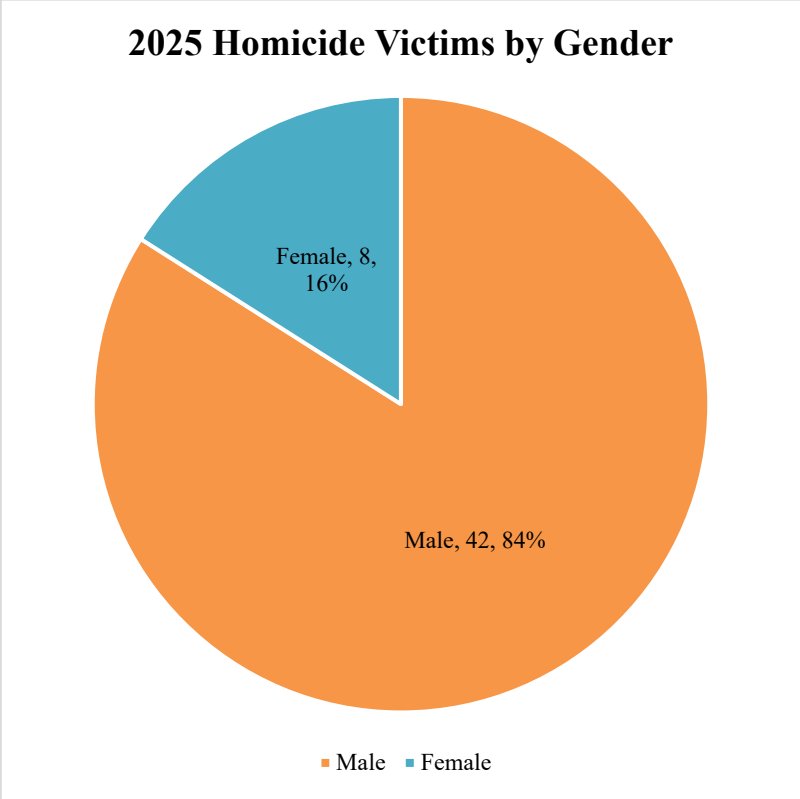
Homicides

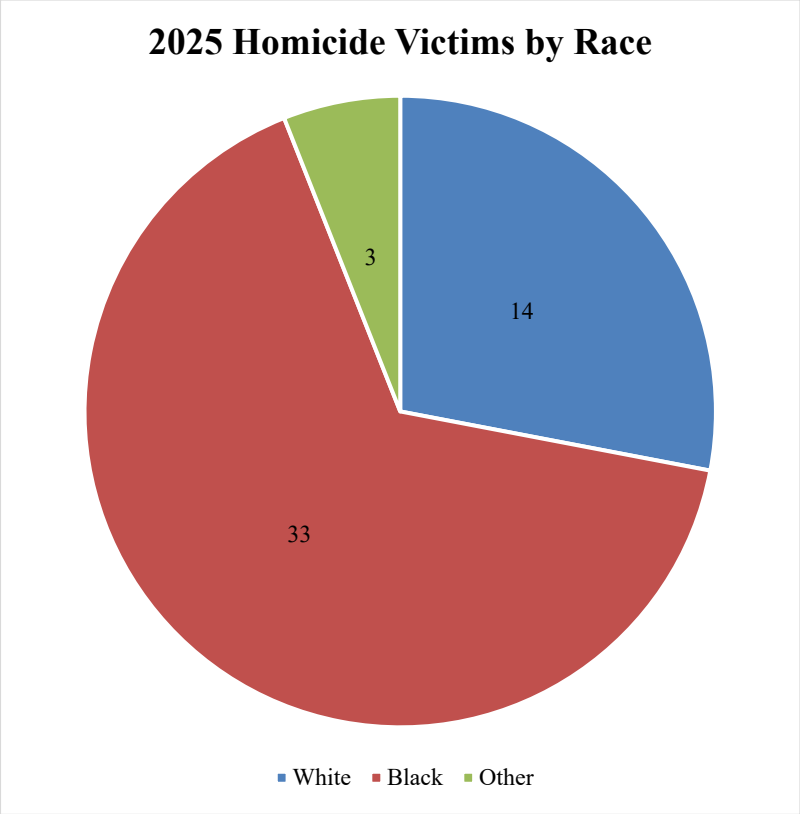

Homicides
120
100
80
60
40
20
0
102
61
54
66
50
2021
2022
2023
2024
2025


Homicide by County
Number of Homicides
120
100
80
60
40
20
0
17
10
75
12
12
37
7
15
32
10
11
45
7
7
36
2021
2022
2023
2024
2025
New Castle
Sussex
Kent

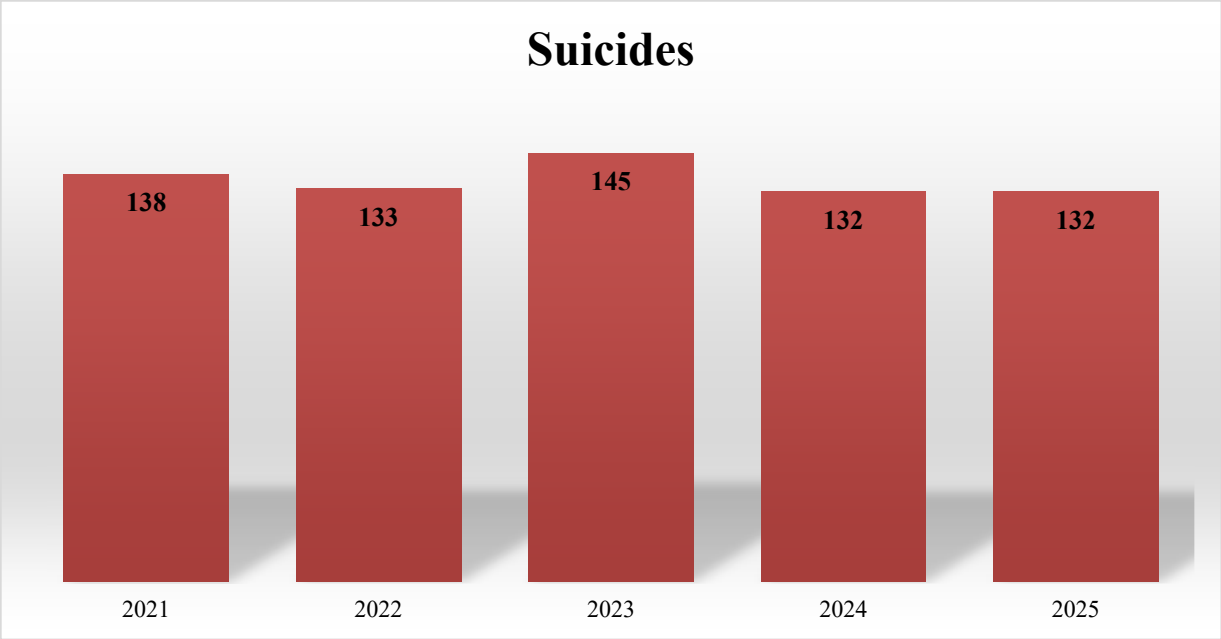

Homicide by Mechanism*
*Some homicides involved multiple mechanisms in 2022 so they are counted more than once here.
Number of Homicides
120
100
80
60
40
20
0
2021
2022
2023
2024
2025
82
11
4
5
44
4
8
7
42
3
4
5
49
10
4
3
44
4
0
2
Firearms
Blunt Force
Sharp Instruments
Other

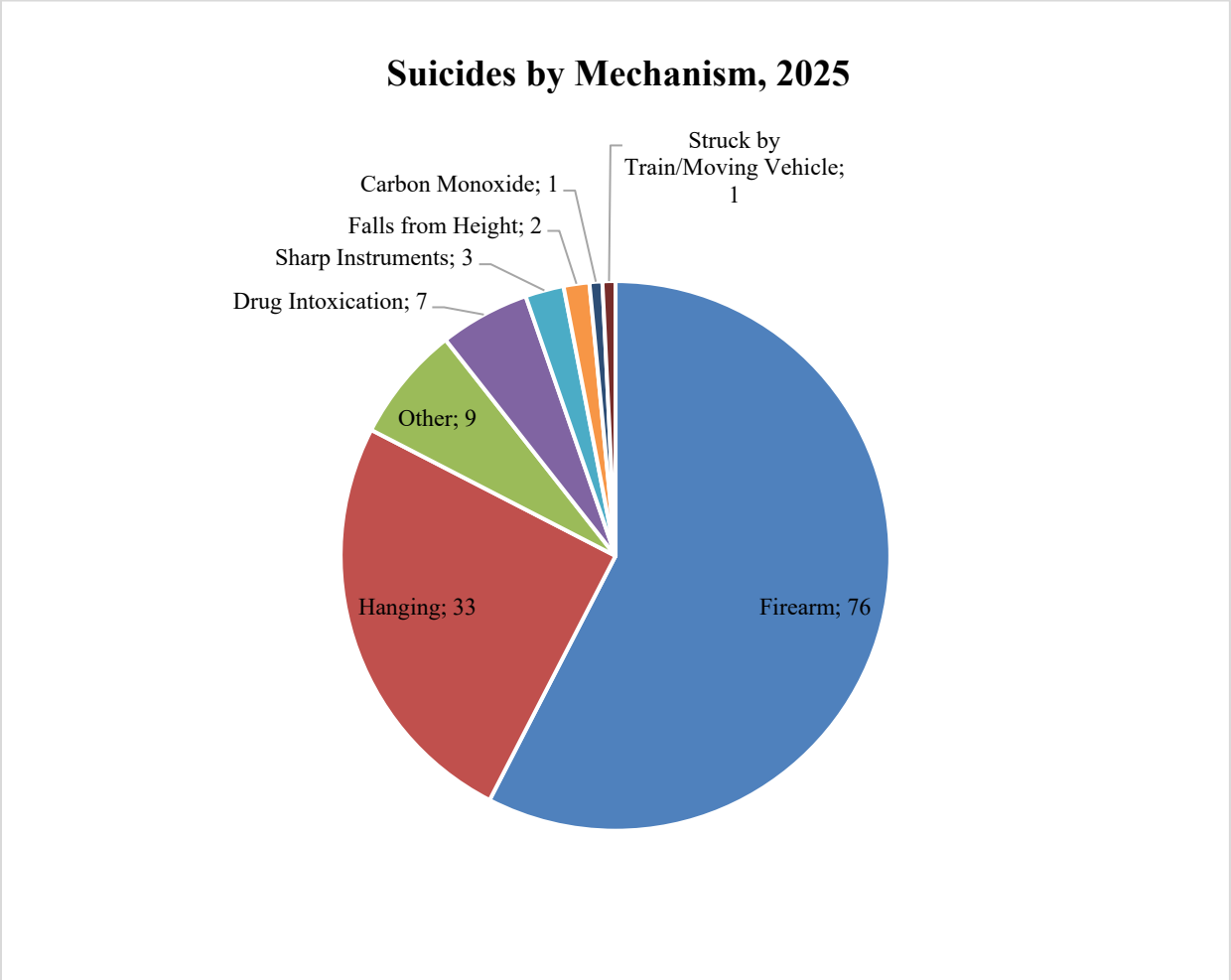

Homicides Victims by Age 2025
Number of Homicides
14
12
10
8
6
4
2
0
2
13
12
9
6
3
5
<11
11-20
21-30
31-40
41-50
51-60
> 60
Age (Years)


2025 Homicide Victims by Gender
Female, 8, 16%
Male, 42, 84%
Male
Female

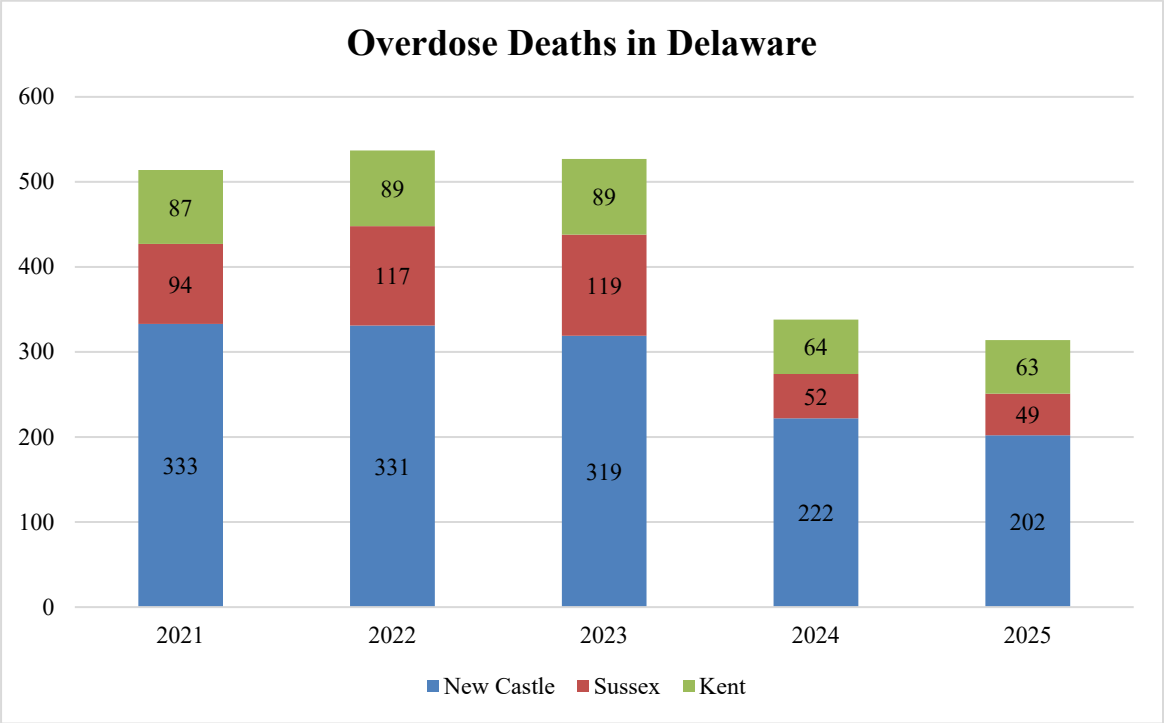

2025 Homicide Victims by Race
3
14
33
White
Black
Other

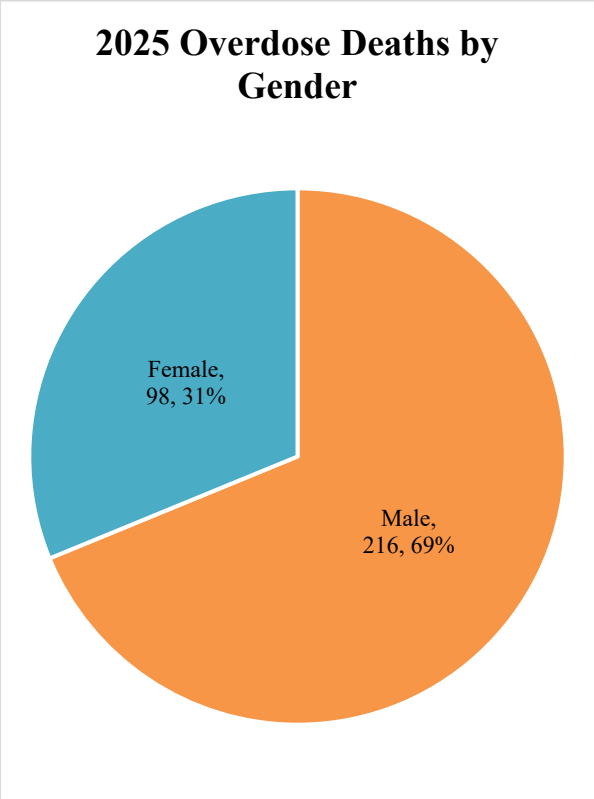
Suicides

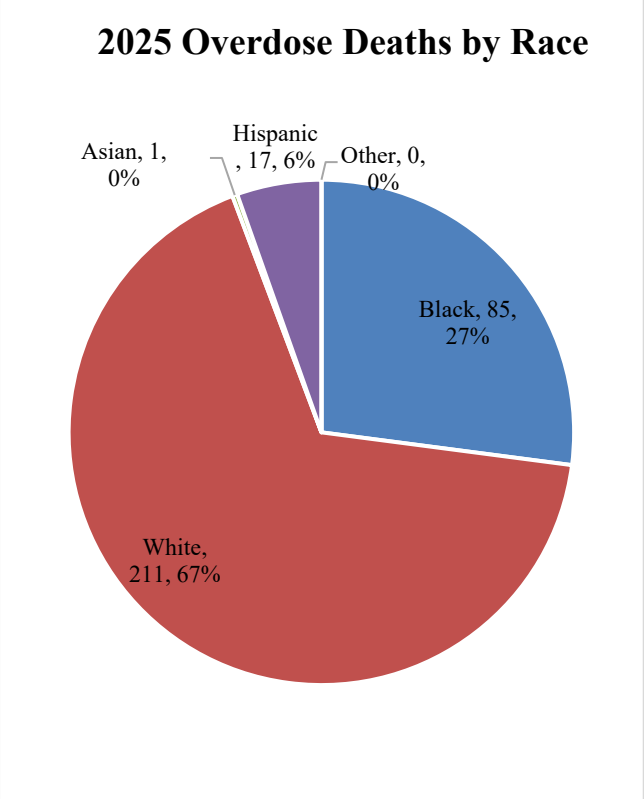

Suicides
138
133
145
132
132
2021
2022
2023
2024
2025

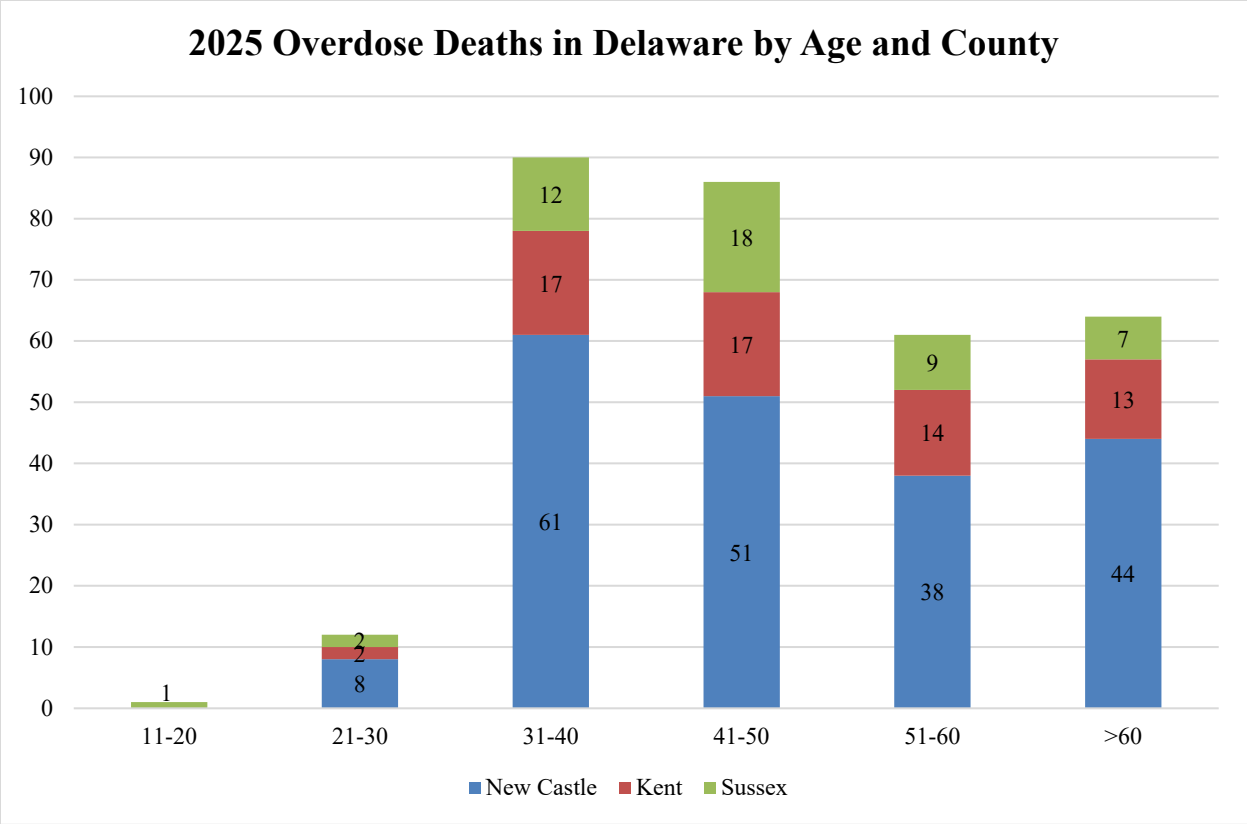

Suicides by Mechanism, 2025
Struck by Train/Moving Vehicle; 1
Carbon Monoxide; 1
Falls from Height; 2
Sharp Instruments; 3
Drug Intoxication; 7
Other; 9
Hanging; 33
Firearm; 76

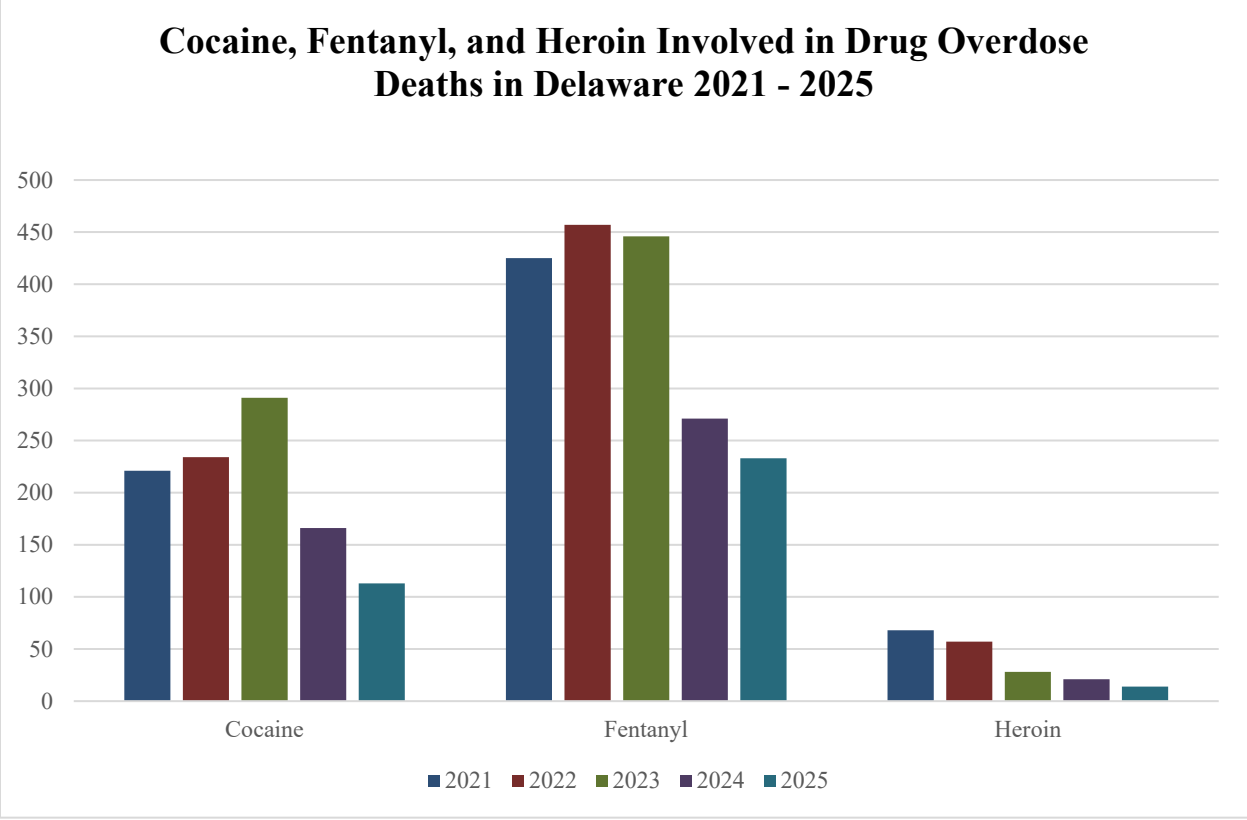
Drug Overdose Deaths








2025 Overdose Deaths in Delaware by Age and County
100
90
80
70
60
50
40
30
20
10
0
1
2
2
8
12
17
61
18
17
51
9
14
38
7
13
44
11-20
21-30
31-40
41-50
51-60
>60
New Castle
Kent
Sussex


Cocaine, Fentanyl, and Heroin Involved in Drug Overdose Deaths in Delaware 2021 - 2025
500
450
400
350
300
250
200
150
100
50
0
Cocaine
Fentanyl
Heroin
2021
2022
2023
2024
2025

Toxicology

Overview

The Toxicology (Tox) Unit of the State of Delaware Division of Forensic Science handles both postmortem and Driving Under the Influence (DUI)/Other cases. The unit is comprised of a team of 11—the Chief Forensic Toxicologist, the Casework Laboratory Manager I, the Research Laboratory Manager I, seven Analytical Chemists (three for casework and four for research), and one Laboratory Technician.

Most cases (including all DUIs) begin with a preliminary ELISA (Enzyme-linked Immunosorbent Assay) Drug Screen (**EIA**), which tests qualitatively for the following 19 drugs/drug classes: Amphetamine, Methamphetamine, Opiates, Phencyclidine, Buprenorphine, Methadone, Benzodiazepines, Cocaine, Barbiturates, Cannabinoids, Oxycodone, Fentanyl, Carisoprodol, Diphenhydramine, Ketamine, Meperidine, Tramadol, Zolpidem, and Xylazine. Positives from this screen are entered for additional confirmatory testing. A Special Testing ELISA panel is also available, which includes Acetaminophen and Salicylates.

The Toxicology Unit has five confirmatory procedures for the following drugs/drug classes (and their metabolites), which provide quantitation (concentrations or amounts of drugs): Amphetamine-type Stimulant and Bupropion (**AMP**); Antidepressant, Antihistamine, and Cyclobenzaprine (**ADP**); Benzodiazepine, Z-drug, and Quetiapine (**BENZ**); Cannabinoid (**THC**) [1]; and Multidrug Panel 1 (**1MP**). All confirmatory procedures now utilize Liquid Chromatography-tandem Mass Spectrometry (LC-MS/MS).

In addition to the ELISA Drug Screen, the Toxicology Unit has two confirmatory (but qualitative) drug screens. The Alkaline Drug Screen (**ALKDS**) by Gas Chromatography-Mass Spectrometry (GC-MS) procedure covers approximately 200 different compounds, and the Acidic/Neutral Drug Screen (**ANDS**) covers approximately 20 compounds. Alcohol/Volatiles Analysis (**VOL**) using Headspace Gas Chromatography with Flame Ionization Detection (GC-FID) is another routine procedure used by the unit. In addition to ethanol, this procedure provides quantitation of acetone, isopropanol, and methanol and qualitative identification of acetaldehyde and 1,1-difluoroethane.

[1] Note that this expanded panel was implemented with all cases received as of 12/01/25, as will be detailed later.

Staffing and Accreditation

The Toxicology Unit had some staff transitions in 2025. At the end of May, an Analytical Chemist III was promoted to the Laboratory Manager I of the Forensic Chemistry Unit. This vacancy was filled with an internal promotion in early September, which thereby created another vacancy for the unit's Laboratory Technician III position, which was filled in mid-December. These staffing transitions have meant that the team has spent a significant amount of time training this year.

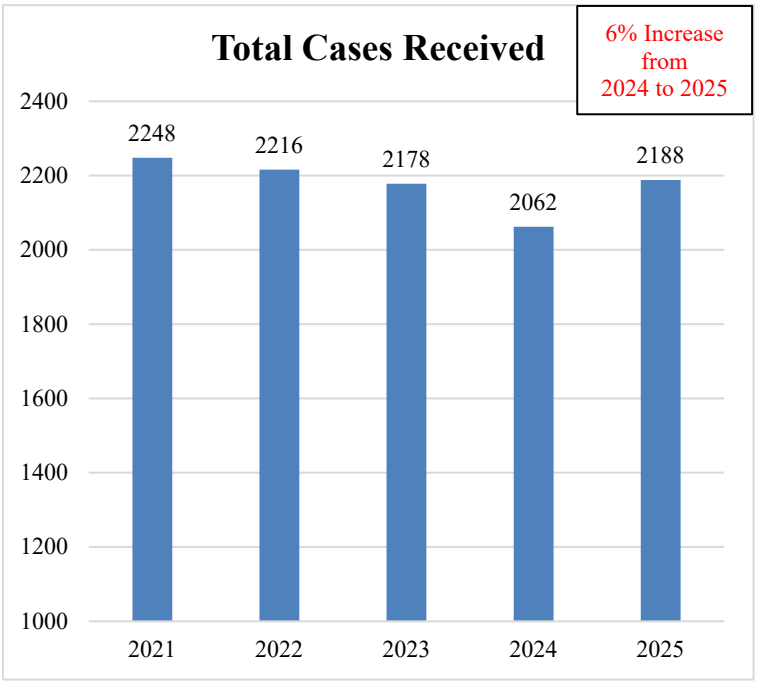
The Tox Unit is an accredited laboratory—both to the standards set by ISO/IEC 17025:2017 and to those by the American Board of Forensic Toxicology (ABFT). The unit had a surveillance assessment in Spring 2025 and maintained its laboratory accreditation requirements.

Data

The statistics below have been hand-gathered and hand-tallied.

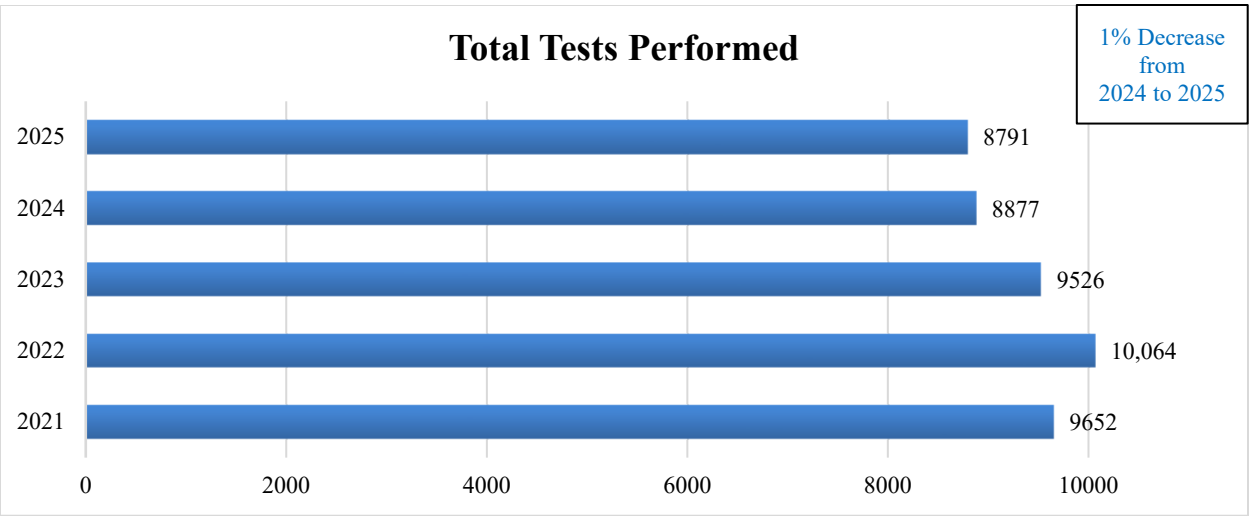
Total Cases Received and Total Tests Performed

In 2025, the Toxicology Unit received **1174 DUI/Other cases** and **1014 postmortem cases**[2] for testing. This equated to **2188 total cases received** and **8791 total tests run in 2025**. This bar graph shows how the number of cases increased **6% from 2024 to 2025**.



Because each case may have multiple samples and/or require more than one test, and because the unit also runs 38 proficiency test samples each year (as well as verifications and validations and sometimes repeat samples), the number of tests performed far exceeds the number of cases received each year. In 2025, there were 8791 tests performed in the Tox Unit—a **1% decrease since last year** (when 8877 tests were performed). Just like last year, this shows that the 1MP panel, which was implemented in September 2023 and which combined more than nine methods into one, has been effective in reducing the number of extractions at the bench.

[2] Note that this total does not include an additional 103 cases that were received by the Tox Unit as "Save Only" cases and for which no testing was completed.



While the number of tests has decreased, the Tox Unit's scope (and number of drugs they are testing for) have expanded significantly. Thus, even if we are signing out fewer reports/cases, they are taking significantly longer because more data must be reviewed. For example, the 1MP method covers 69 compounds; prior to this method, the largest quantitative method had just 28 compounds, and 1MP is the panel that runs the most often. Despite this more complex testing, losing a senior Analytical Chemist this year, having three out of eight staff members (37.5%) in training, and an increased DUI/Other caseload (that was as high as +29.9% compared to the same time the previous year at the end of April), we have managed to keep up with our projects and caseload with acceptable turnaround times.

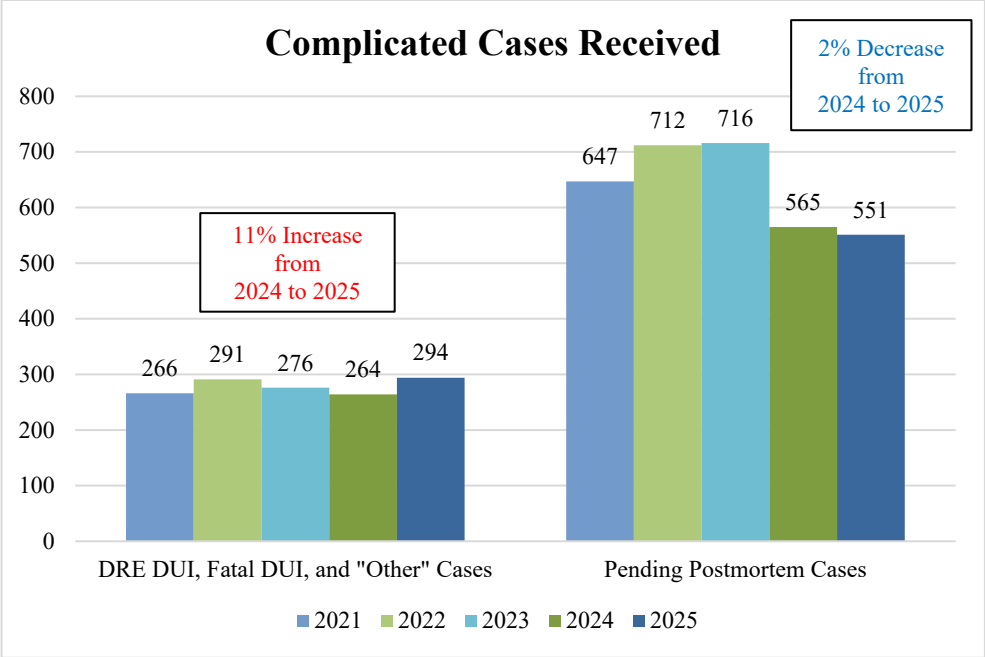
Complicated Cases Received

DRE DUI, Fatal DUI, and "Other" Cases

To better understand the unit's workload, one needs to examine the number and type of tests that are being completed. DUI cases received from Drug Recognition Experts (DREs), for example, generally require significantly more testing than non-DRE cases. The same is true for fatal and "Other" cases such as inquiries into child abuse/death/endangerment (including children who have died while caregivers were impaired by drugs and children consuming drugs themselves). As the following chart shows, the number of DRE, Fatal, and "Other" cases are **up 11% since last year**.

Pending Postmortem Cases

Similarly, different types of postmortem cases require varying amounts of time to complete. Pending cases, so named because the cause and/or manner of death is/are pending further investigation (and which include suspected drug deaths), comprised **54% of the postmortem cases received in 2025**. These pending cases often require multiple tests, including time-consuming ALKDS procedures and/or



advanced quantitative confirmations. The Tox Unit often receives hospital samples from drug overdose deaths for complete testing. The number of postmortem pending cases is **down 2% since last year**.

ELISA Drug Screening Data

The tables below display the ELISA Drug Screen results to show the number of positives for each drug/drug class for all cases as percentages of the total cases received. It is important to note that this is screening data, so these are strictly preliminary/presumptive results.

Of the DUI/Other cases received in 2025, 57.8% screened positive for cannabinoids (marijuana), which is the highest percentage for this that the unit has ever seen, and which is not surprising since recreational cannabis dispensaries opened in Delaware on 08/01/25, making marijuana more readily available throughout our state.

For seven straight years (2018-2024), fentanyl had the highest percentage behind cannabinoids, but in 2025, cocaine was in the number two spot. The positivity rate for fentanyl has decreased from 44.2% in 2021 to 23.6% in 2025, which is a significant drop of 20.6%. Xylazine was added to this panel with all cases received as of 10/01/24, and the number of positives went from 13.5% for these last three months of 2024 down to only 3.3% in all of 2025.

DUI/Other Cases:

Drug/Drug Class (Cross-Reactives) on ELISA	Percentage of DUI/Other Cases that Screened Positive				
Result	**2025**	**2024**	**2023**	**2022**	**2021**
Cannabinoids	**57.8%**	49.8%	53.5%	55.4%	52.6%
Cocaine	**28.3%**	28.5%	30.2%	27.8%	24.1%

Fentanyl	**23.6%**	34.5%	38.3%	42.0%	**44.2%**
Methamphetamine	12.9%	11.3%	13.3%	14.1%	14.4%
Benzodiazepine	10.9%	21.1%	19.9%	21.2%	20.9%
Amphetamine	10.8%	10.1%	11.5%	10.0%	12.8%
None Detected	10.6%	12.3%	10.4%	8.5%	9.1%
Methadone	9.1%	10.5%	12.4%	11.9%	13.5%
Opiate	8.7%	7.9%	8.9%	16.4%	17.2%
Buprenorphine	6.7%	5.0%	4.8%	3.5%	5.4%
Oxycodone	5.4%	4.2%	3.9%	3.5%	5.2%
Diphenhydramine	4.3%	3.5%	5.6%	6.2%	5.4%
Xylazine	**3.3%**	**13.5%**	N/A	N/A	N/A
Phencyclidine	2.6%	1.8%	2.0%	3.5%	6.2%
Ketamine	0.9%	1.5%	1.2%	1.3%	0.6%
Zolpidem	0.9%	0.9%	0.9%	1.1%	0.8%
Barbiturate	0.8%	0.2%	0.7%	0.6%	0.4%
Carisoprodol	0.2%	0.2%	0.1%	0.1%	0.6%
Tramadol	0.1%	0.5%	0.3%	0.7%	0.4%
Meperidine	0.0%	0.0%	0.0%	0.0%	0.0%

The number one category for postmortem cases was None Detected, and just as was seen with DUI/Other cases, the number of postmortem cases screening positive for fentanyl dropped again in 2025 (from 26.8% in 2024 down to 25.0% in 2025). This is the lowest positivity rate that has been seen for fentanyl in the past eight years, which is very encouraging. Cannabinoids were the second highest category in 2025 at 27.9%. After fentanyl, the next highest percentages, which were all greater than 10%, were as follows: cocaine, diphenhydramine, and amphetamine. The percentage of postmortem cases testing positive for xylazine decreased from 2024 (9.8%) to 2025 (5.1%) just like with DUI/Other cases.

Postmortem Cases:

Drug/Drug Class (Cross-Reactives) on ELISA	**Percentage of Postmortem Cases that Screened Positive**				
Result	**2025**	**2024**	**2023**	**2022**	**2021**
None Detected	28.7%	28.4%	21.8%	22.4%	27.1%
Cannabinoids	27.9%	28.3%	33.4%	33.4%	31.0%
Fentanyl	**25.0%**	**26.8%**	39.3%	40.4%	36.5%
Cocaine	20.3%	21.0%	28.9%	25.2%	21.8%
Diphenhydramine	13.7%	15.0%	14.8%	16.6%	17.2%
Amphetamine	10.9%	12.6%	13.6%	15.6%	14.4%
Benzodiazepine	7.7%	9.0%	8.2%	11.8%	10.9%
Opiate	7.4%	7.9%	8.8%	13.7%	15.5%
Methadone	5.6%	5.3%	5.8%	4.5%	5.2%
Methamphetamine	5.2%	7.4%	7.4%	9.1%	8.4%

Xylazine	**5.1%**	**9.8%**	N/A	N/A	N/A
Buprenorphine	4.4%	3.6%	4.4%	4.1%	2.7%
Oxycodone	4.0%	5.5%	6.6%	5.8%	6.5%
Ketamine	1.0%	0.6%	1.4%	1.0%	0.7%
Tramadol	0.8%	1.1%	1.3%	1.0%	1.1%
Zolpidem	0.8%	0.7%	0.6%	1.7%	1.3%
Barbiturate	0.6%	0.7%	0.7%	0.7%	0.6%
Phencyclidine	0.5%	1.0%	0.6%	1.0%	0.9%
Carisoprodol	0.3%	0.3%	0.2%	0.3%	0.6%
Meperidine	0.0%	0.0%	0.0%	0.0%	0.0%

Top Ten Reported Compounds from Confirmatory Procedures

The tables below show confirmatory results. The inactive marijuana metabolite, delta-9-carboxy-tetrahydrocannabinol (THC-COOH), was confirmed positive in 47.2% of the DUI/Other cases received, in the number one spot as the top reported compound from confirmatory procedures in 2025, and the active parent compound of marijuana, delta-9-tetrahydrocannabinol (THC), was confirmed positive in 34.8% of DUI/Other casework, in the number two spot. In 2024, these percentages were 38.5% and 25.4%, respectively, so they increased for both compounds. Benzoylecgonine (an inactive metabolite of cocaine) was the third top-reported compound for DUI/Other cases at 28.5%, followed by fentanyl (22.9%) and then cocaine (21.2%).

DUI/Other Cases:

Top Ten Order	Confirmatory Method	Compound	As a Percentage of Total DUI/Other Cases Received
1	THC	Delta-9-Carboxy-Tetrahydrocannabinol	47.2%
2	THC	Delta-9-Tetrahydrocannabinol	34.8%
3	1MP	Benzoylecgonine	28.5%
4	1MP	Fentanyl	22.9%
5	1MP	Cocaine	21.2%
6	1MP	Norfentanyl	18.7%
7	1MP	Ecgonine Methyl Ester	18.0%
8	AMP	Methamphetamine	12.4%
9	AMP	Amphetamine	10.3%
10	1MP	4-ANPP	10.1%

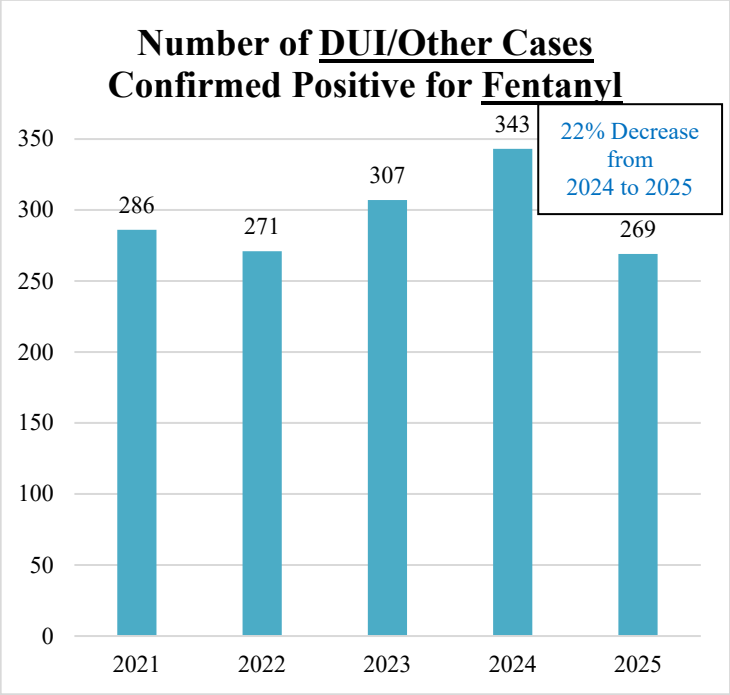
For postmortem cases, fentanyl was in the number one spot (at 23.6% of all postmortem cases received), followed by ethanol (19.7%), benzoylecgonine (19.6%), and norfentanyl (a metabolite of fentanyl, 19.5%). The top seven were in same order in 2024.

Postmortem Cases:

Top Ten Order	Confirmatory Method	Compound	As a Percentage of Total Postmortem Cases Received
1	1MP	Fentanyl	23.6%
2	VOL	Ethanol	19.7%
3	1MP	Benzoylecgonine	19.6%
4	1MP	Norfentanyl	19.5%
5	1MP	4-ANPP	16.5%
6	1MP	Ecgonine Methyl Ester	13.7%
7	1MP	Cocaine	12.8%
8	ADP	Diphenhydramine	6.2%
9	1MP	Methadone	6.1%
10	1MP	Naloxone	5.7%

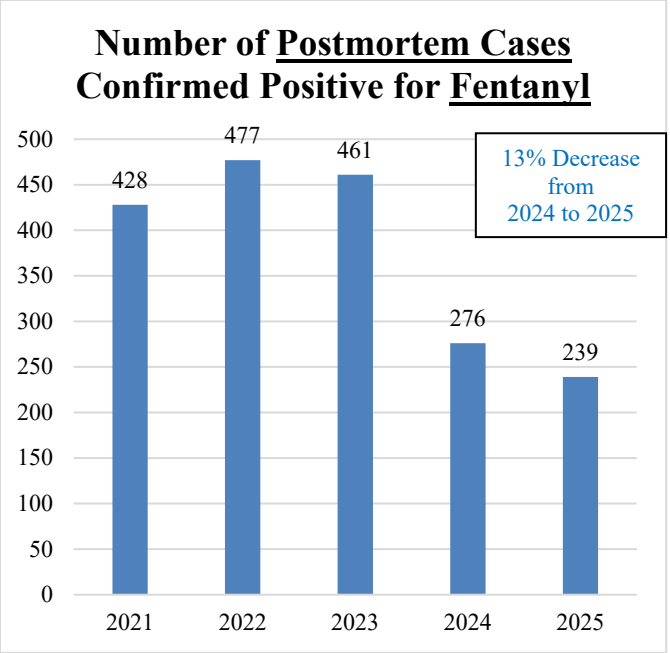
Fentanyl and Cocaine Data

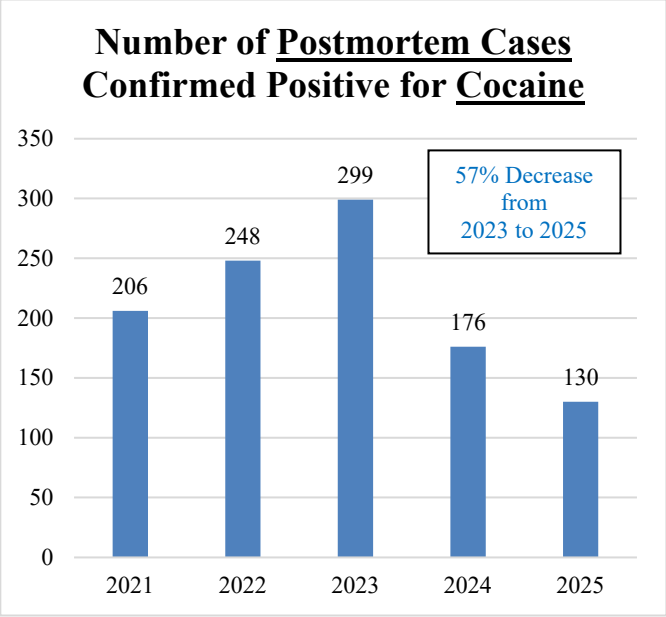
Fentanyl confirmations in the Tox Unit have been high for the past eight years; however, they have **decreased 22% for DUI/Other cases since last year**, as the chart illustrates.



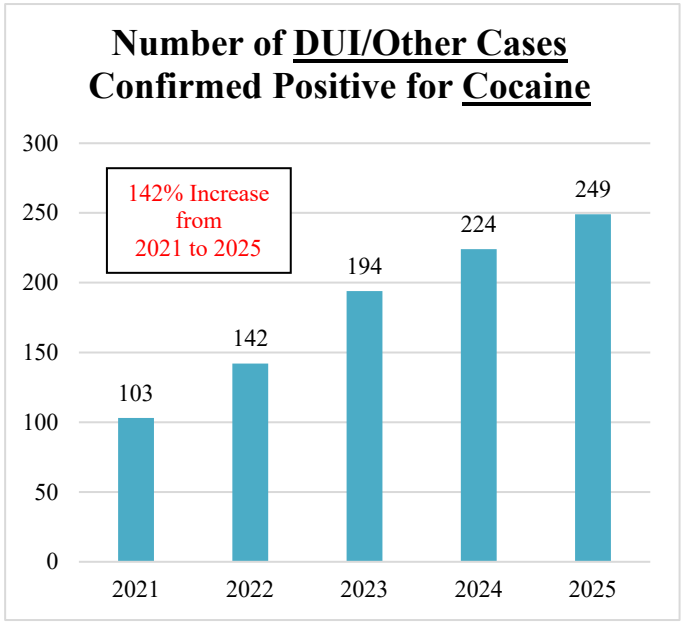
As the two fentanyl charts show, there were **more DUI/Other cases that confirmed positive for fentanyl (269) than postmortem cases (239)**—this has happened for the second straight year.

Fentanyl confirmations have **decreased 13% for postmortem cases since last year**. Of the total postmortem cases received, 24% were reported for fentanyl. Between 2018 and 2023, that percentage was consistently between 35% and 40%.

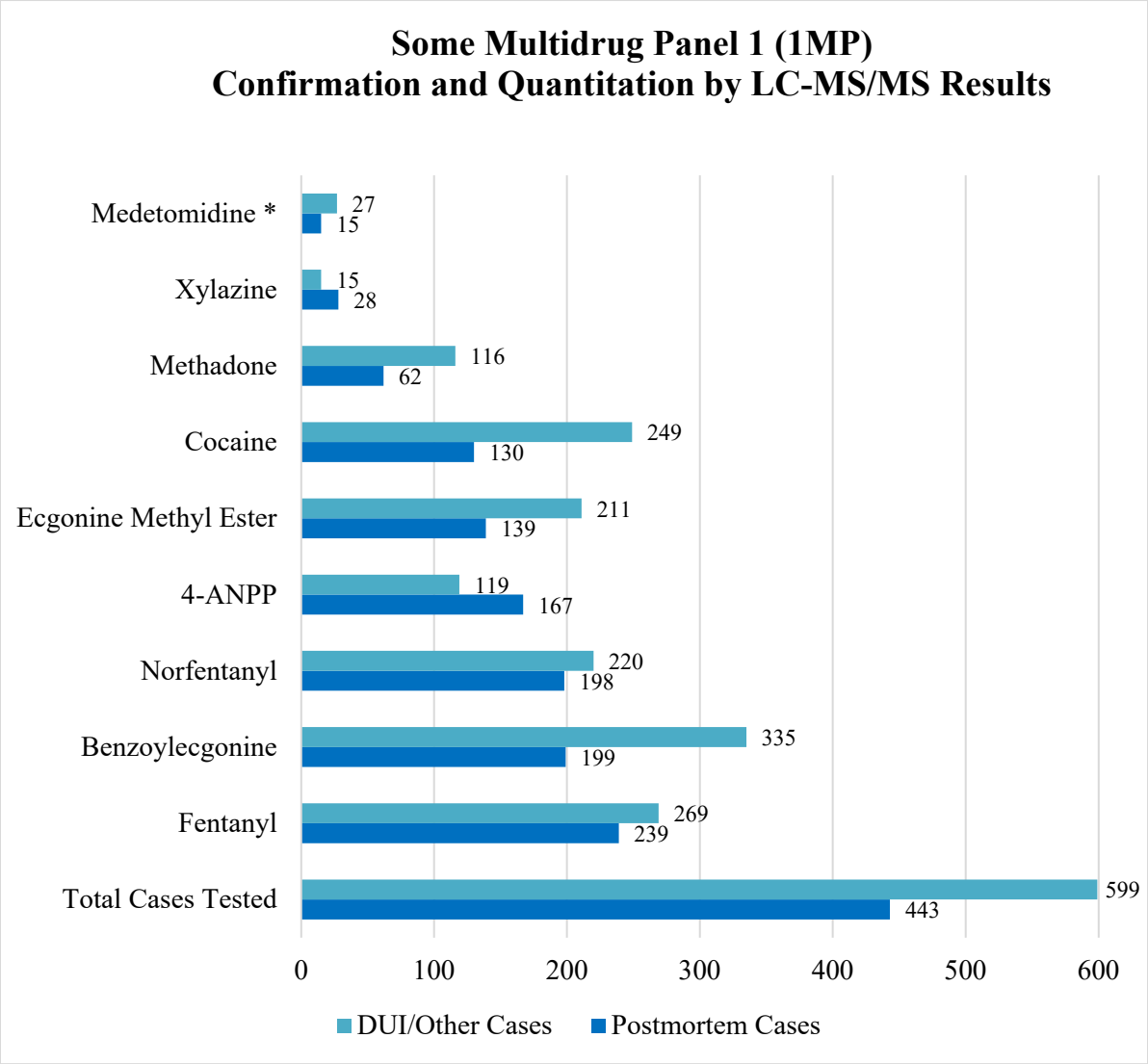




While fentanyl rates are dropping, cocaine rates among the DUI/Other case population have been steadily rising over the past five years—they are **up 142% for DUI/Other cases since 2021**, as the below chart depicts. Meanwhile, in the postmortem case population, cocaine rates have also been dropping over the past two years—they are **down 57% for postmortem cases since 2023**, as also shown below.



Of the 69 compounds included on the Multidrug Panel 1 Confirmation, fentanyl was the number one confirmed drug for postmortem cases, while benzoylecgonine was number one for DUI/Other cases. As the below chart shows, some of the top reported drugs from this panel were as follows: fentanyl, benzoylecgonine, norfentanyl, 4-ANPP, ecgonine methyl ester, cocaine, and methadone. The statistics for xylazine and medetomidine (which was only added to the panel, effective with cases received 11/01/25 and onward) are also shown in this chart.



* Medetomidine was added to the 1MP panel, effective with cases received 11/01/25 and onward.

Projects and Grants

The Toxicology Unit completed several projects in 2025. We added **medetomidine** to our 1MP panel, as detailed above. This included 16 more validation runs for 1MP.

Our biggest accomplishment in 2025 was completing the method validation for our expanded cannabinoid confirmatory panel—***Cannabinoid Confirmation and Quantitation by LC-MS/MS*** **(THC)**—for both blood and urine and putting it live for all casework received 12/01/25 and onward. This project included countless research and method development runs and 30 validation runs. This expanded panel brings many benefits to our office and the State of Delaware. First of all, it has increased from just three reportable compounds to now 12 (a +300% improvement). Please see below table of compounds and

their reporting ranges. This is significant because many of our child abuse/death/endangerment cases involve cannabis edibles that contain other cannabinoids such as delta-8-THC. Across all of our casework, we have already seen many positives for the additional compounds. Secondly, this method requires much less sample volume (75% less; 500 µL down from 2 mL required for our GC-MS method). The extraction is also less tedious, and we are hopeful that many of the interferences that we dealt with on GC-MS will no longer be an issue. This expanded panel also holds more cases (now up to 48 total samples per batch versus only 36 previously) to help with efficiency. A final improvement is that our reporting limit for delta-9-tetrahydrocannabinol (THC) is down from 2.0 ng/mL on GC-MS to now 1.0 ng/mL, and the upper reporting limits have increased considerably too, as shown below:

Compound	**Reporting Range**
7-Carboxy-Cannabidiol	1.0 – 200 ng/mL (Qualitative only)
11-Hydroxy-Delta-9-Tetrahydrocannabinol	1.0 – 200 ng/mL
Cannabidiol (CBD)	1.0 – 200 ng/mL
Cannabigerol (CBG)	1.0 – 200 ng/mL
exo-Tetrahydrocannabinol	1.0 – 200 ng/mL
Delta-8-Tetrahydrocannabinol	1.0 – 200 ng/mL
Delta-9-Tetrahydrocannabinol	1.0 – 200 ng/mL
Cannabinol (CBG)	1.0 – 200 ng/mL
Delta-9-Tetrahydrocannabinolic Acid A	1.0 – 200 ng/mL (Qualitative only)
Delta-8-Carboxy-Tetrahydrocannabinol	4.0 – 400 ng/mL
Delta-9-Carboxy-Tetrahydrocannabinol	4.0 – 400 ng/mL
Delta-10-Tetrahydrocannabinol	2.0 – 400 ng/mL (Qualitative only)

The Tox Unit received grant funds from three different programs in 2025— the Paul Coverdell Forensic Science Improvement grant, Congressionally Directed Spending (CDS) grant funds, and the Centers for Disease Control and Prevention's (CDC's) Overdose Data to Action (OD2A) grant. These funds greatly support the Tox Unit in their efforts in response to the opioid/fentanyl epidemic and also to Delaware's marijuana legalization to bring on new methods and equipment and to expand their scope. With our grant funds, we were also able to purchase new laboratory supplies and equipment and new computers.

We have also made great progress in moving forward the grant for a new quadrupole time-of-flight LC-MS (**LC-QTOF**). This included planning the new laboratory space in the Annex for this grant purchase. This instrument will significantly enhance our ability to detect novel psychoactive substances (NPSs) into the future.

DNA

Overview

The DNA laboratory consists of two sections, the Databasing or CODIS (COmbined DNA Index System) section and the Casework section. The Databasing section processes all the convicted offender samples submitted to the laboratory from the Delaware State Police/State Bureau of Identification (DSP/SBI), Probation and Parole, and the Department of Corrections (DOC), then uploads the generated DNA profiles into the CODIS database. The Databasing section is also required to confirm all potential hits. The Casework section examines evidence, conducts preliminary testing for body fluids, performs DNA testing, and interprets data derived from the tests to draw and support conclusions. The laboratory accepts all types of cases ranging from theft and property crimes to homicides and sexual assaults. The DNA profiles generated from processing casework may also be entered into CODIS at either the State or National index (level).

CODIS

At the beginning of 2025, 87 offender samples from 2024 had not been uploaded to CODIS. All, but 6, of these samples were received at the laboratory in December of 2024. All 87 of these samples were uploaded into CODIS in 2025. In 2025, the CODIS section received 1164 offender samples. This number includes 160 samples that could not be tested due to incomplete submission information. The laboratory received approximately 0.8% fewer samples in 2025 than in 2024.

The average turnaround time (TAT) for uploading offender samples into the National database essentially stayed the same in 2025 from an average of 20 total days in 2024 to an average of 19.6 total days in 2025. We continue to get offender samples with incomplete submission information. For these samples and samples that do not produce a usable DNA profile, we continue to work with DOC.

In 2025, 1122 offender samples and 139 casework samples were uploaded into the State and National indexes. It should be noted that some offender samples only gave a partial DNA result when initially tested. These samples were re-processed and uploaded again, once additional DNA information was obtained from them. Offender samples were processed monthly, and by the end of the year all samples, except the ones received in the last quarter of 2025 had been uploaded into CODIS. Those final samples were uploaded in the 1st quarter of 2026.

In 2025, the DNA laboratory had 53 CODIS hits or “matches” from either the State or National index. The national hits include DNA profiles from several states that either hit to DE convicted offender or where DNA profiles uploaded by DFS hit to cases, offenders, or arrestees from other states. The CODIS

hits included theft, motor vehicle theft, burglary, robbery, sexual assault, and homicide cases. In 2025, as in past years, there were instances in which a convicted offender's sample was collected by DOC and uploaded on good faith into CODIS. When the offender's DNA profile hit on an evidence sample, during the confirmation process, it was realized that the offender profile had to be removed from CODIS because the offender did not have a qualifying offense under Title 11. Additionally, we have proposed a legislative initiative to collect samples from all felonies. We are still currently in the process of determining if the courts could be of assistance since the offender list is issued by the courts.

The table below reflects the types of cases that have hit in CODIS for 2025.

CODIS Hits	Type of Case	CODIS Hits	Type of Case
16	Burglary	3	Robbery
4	Homicides/Attempted Homicide	1	Unidentified remains
15	Sexual Assaults	1	Control substance
2	MDOP	1	Strangulation
7	Stolen/theft of motor vehicle	1	Attempted theft
1	Vandalism	1	Stolen firearm

Casework

In the beginning of 2025, there were 95 cases that were either assigned but not completed, or unassigned from 2024. Thirty-seven (37) of those cases were unassigned at the end of 2024, this included cases with suspects and unknown suspects. All those cases were completed in the 1st quarter of 2025.

In 2025, the DNA Unit received 707 new case submissions and 34 subsequent submissions for a total of 741 submissions. Subsequent submissions are defined as those cases requiring additional testing after a report has been issued or those cases where a report was held until additional evidence has been submitted and tested. There was an approximate 11% increase in the total number of submissions from the previous year. By the end of 2025, there were 162 cases that were either assigned but not completed (69) or unassigned (93). This is an increase from the previous year but, as noted, there was an increase in the number of submissions in 2025. All 162 cases were completed in the first quarter of 2026.

Types of Cases Received in 2025	New Submissions	Supplemental Submissions
Homicide / Att. Homicide	40	8
Sexual Assault	200	11
Assault	20	4
Burglary	82	4
Robbery	17	2
Missing Person/Death Investigation	19	2
Miscellaneous	158	1
Possession of Firearms	155	2
Proficiency Tests	16	0

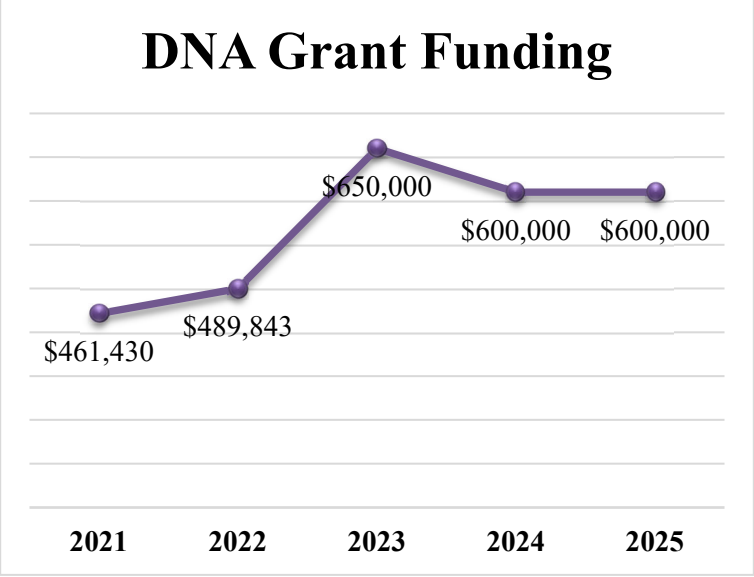
The table provides a breakdown of the types of cases received in 2025.

Our average annual turnaround time (TAT) decreased approximately 17% from 69 total days in 2024 to 57 total days in 2025. The TAT decreased even though the DNA Unit had 1-2 vacant positions throughout 2025. The average number of analysts working on cases full time was 4.4 for 2025. When fully staffed, we have 6 analysts working on cases. The TAT will fluctuate based on staffing and case submission.

In August 2025, Senate Bill 139 was signed into law. This bill codified the Sexual Assault Kit Initiative (SAKI) Testing Policy with some revisions. Of the 200 sexual assault cases submitted for testing, 22 were from years prior to 2024 or 2025. The average completion TAT for sexual assault cases (includes kits and other evidence) is 67 days. This is well within the 90 days noted in the SAKI policy.

The Casework Manager continues to handle the DNA Capacity Enhancement and Backlog Reduction (CEBR) Grants. The CEBR Grant for FY2023 was to end on September 30, 2025, and the closeout documentation by the laboratory was due to the Bureau of Justice Assistance (BJA) by January 30, 2026. But due to the finalization of the validation regarding a new quantitation procedure, PowerQuant® and Quant Studio™ 5 instrument, the grant and the close out was extended for one year to September 30, 2026, and January 30, 2027, respectively.

The laboratory is currently managing 2 DNA CEBR Grants. The FY2023 CEBR grant for $650,000, as noted above, closes on September 30, 2026. The FY2024 CEBR is $600,000, which closes on September 30, 2026. Additionally, the FY2025 CEBR grant is also $600,000.



The amount of grant funds has fluctuated over the years. Grant funds have allowed the DNA Unit to function. In 2025, about 92% of the DNA Unit's operational costs are from grant funds. Only 8% of the DNA laboratory's expenses were from DE state funds.

Grant funding has increased when compared to 2019. This increase is due to the fact that the DNA Unit uses all the grant funds allotted. With the DNA grant funds, the laboratory continued to purchase

reagents, consumables, and other supplies for processing casework and convicted offender samples, provide required continuing education training for each DNA Analyst, pay for external laboratory audits, purchase proficiency tests for each analyst, and purchase new laboratory software. Aside from the daily operational supply purchased with grant funds, the DNA Unit purchased an additional Quant Studio™ 5 instrument for the quantitation method.

Validation or performance checks are a critical part of forensic DNA work. Validations are done on new testing procedures. While performance checks are done to determine if there are any effects from upgrades or modifications to previously validated procedures. As noted in previous DFS annual reports, the DNA Laboratory does not have an individual primarily dedicated to performing validation/performance checks studies. Performance checks are done by the staff in the DNA Unit. Whereas validations can be done by DNA staff or by outside vendors when funding is available. Validations and performance checks done in 2025 include: DNA analysis software (DFS-DNA staff) and software upgrade for the CODIS database and statistical software (DFS-DNA staff). The validation of the new quantitation system was reviewed by the end of 2024 and new policies and procedures were drafted and began to be used in 2025. Majority of the validation of the BSD instrument was completed in 2024 by DFS-DNA staff, and the instrument was in use at the end of the first quarter of 2025.

We continue to use a chemistry kit that examines 27 DNA markers, 7 more than the FBI requirement.

The DFS databasing laboratory and the DFS casework laboratory each underwent on-site external audits based on the FBI's Quality Assurance Standards for each laboratory in May 2025. The FBI Quality Assurance Standards were effective as of July 1, 2020. There were no findings or non-conformities during this audit for either the database laboratory or the casework laboratory.

The following chart provides a comparative analysis of casework for 2020, 2021, 2022, 2023, 2024, and 2025 (the percentages in parentheses show year-over-year changes):

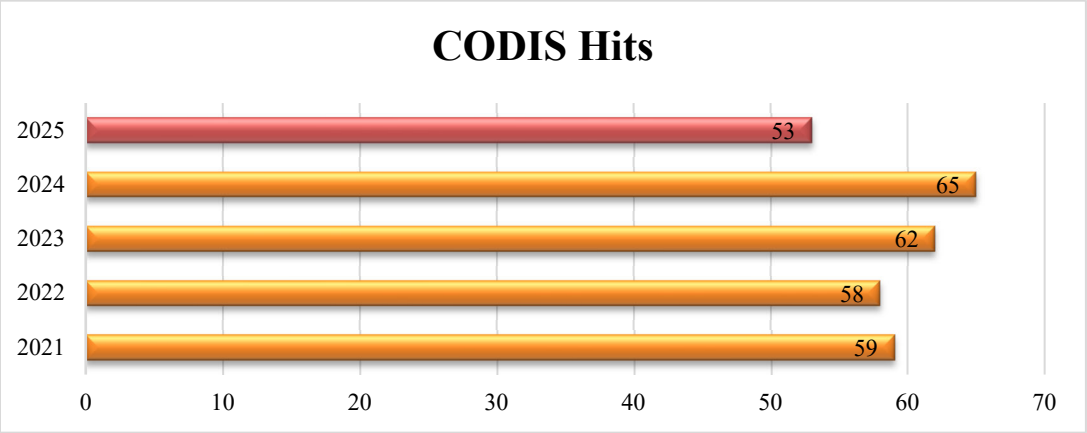
	2020	2021	2022	2023	2024	2025
Total Case Completions	548 (-12%)	627 (+14%)	665 (+6%)	682 (+3%)	753 (+10%)	674 (-11%)
Turnaround Time (Total days submission to completion)	27.1 (-22%)	55.5 (+104%)	45 (-18%)	49 (+8%)	69 (+41)	57 (-17%)
Case Submissions	561 (-5%)	612 (+9%)	726 (+19%)	751 (+3%)	669 (-11%)	741 (+11%)
Staffing (Full-time casework)	4.8 (-14%)	5 (+4%)	5.5 (+15%)	5 (-9%)	5.6 (+12%)	4.4 (-21%)

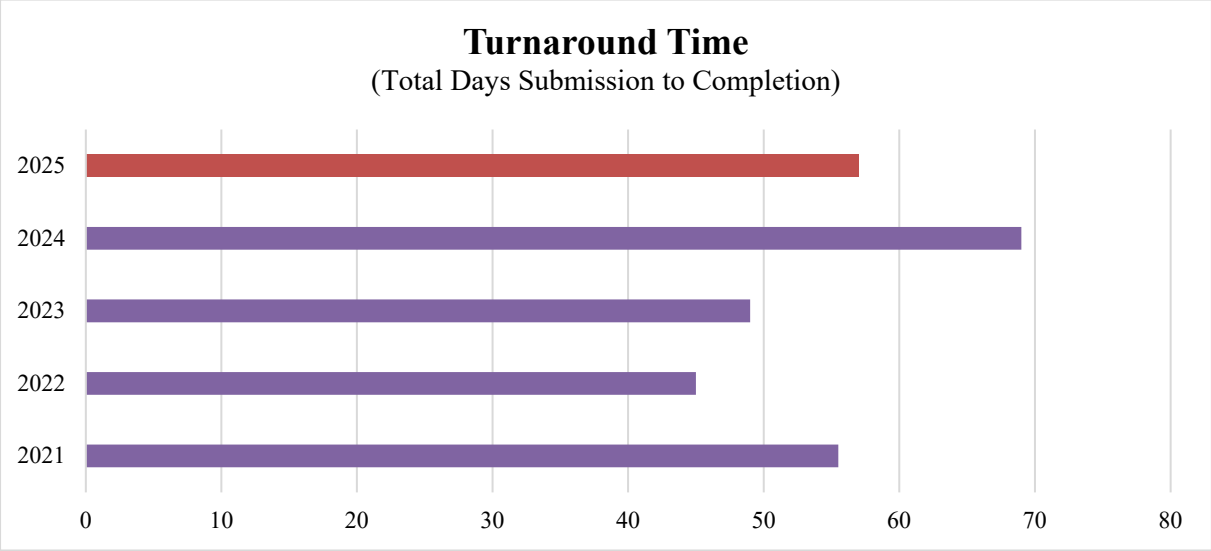
The population for DE has increased about 26% in the last 20 years (2005-2025). The number of cases submitted for DNA testing during that period has increased 586% (from 108 cases to 741). It should be

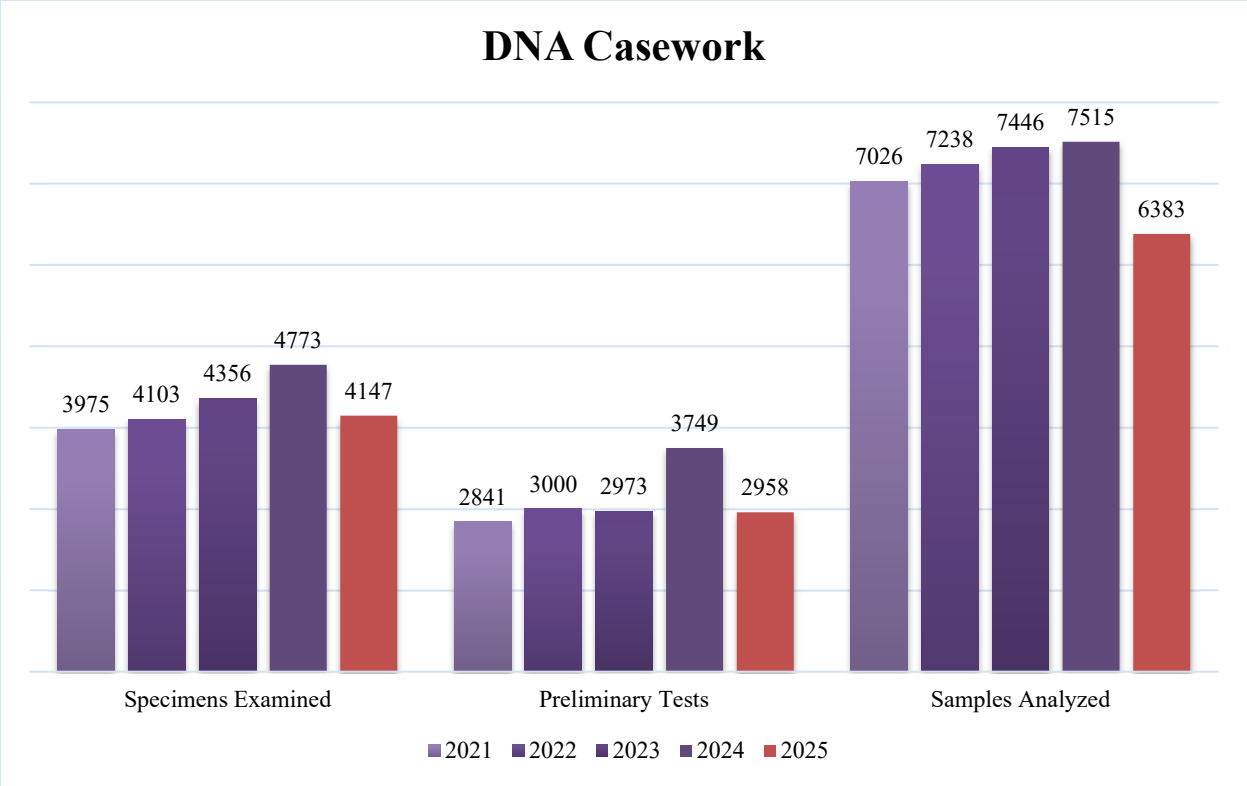
noted that the DFS Quality Assurance Manager (former DNA analyst) has periodically assisted the DNA Unit by reviewing cases. Other than that, permanent staffing for the DNA laboratory has not increased in over 20 years.

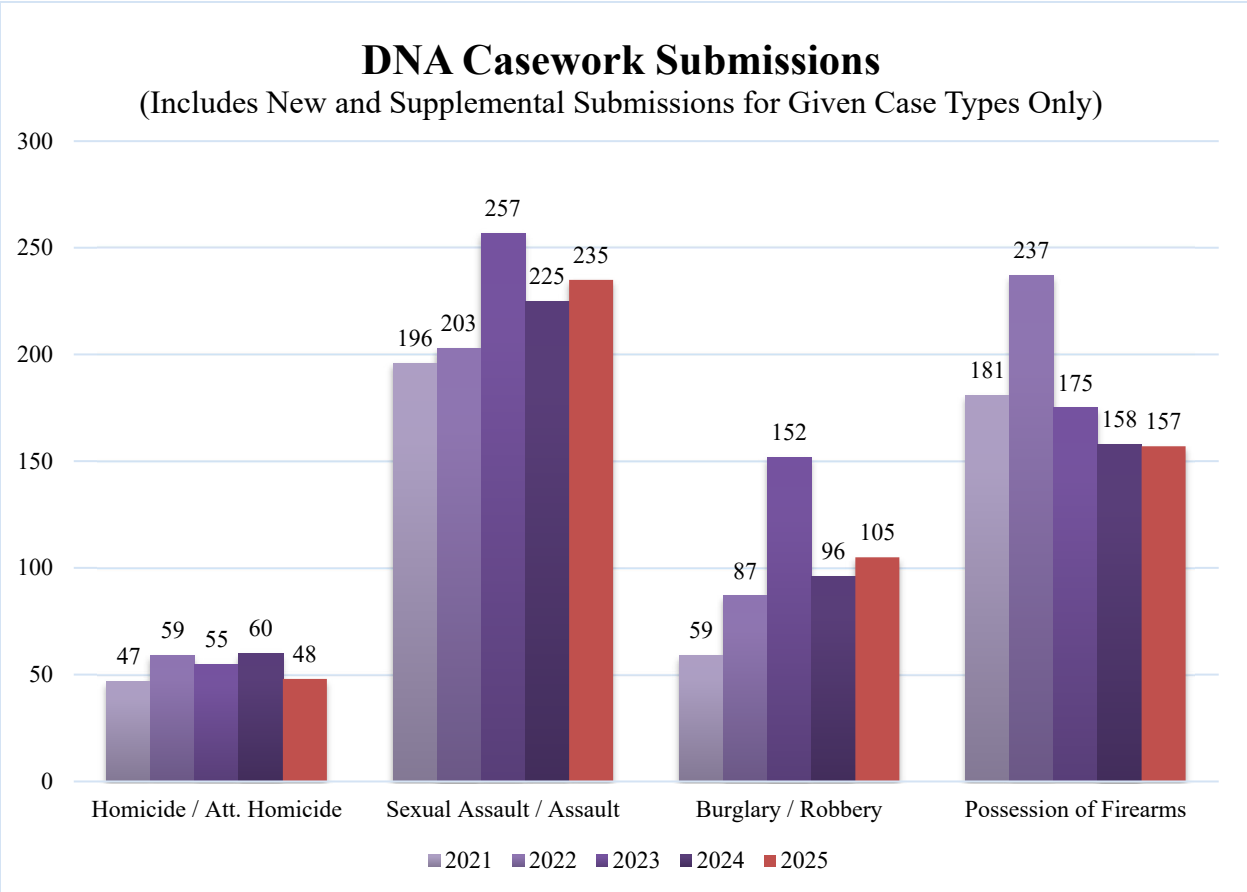
In summary, during 2025, the DNA laboratory received 11% more cases but examined 13% fewer evidence specimens than in 2024. The number of cases completed by the DNA laboratory in 2025 was lower than 2023 and 2024 but casework staffing was also lower. We will continue to work towards keeping our backlog to a manageable number in the next year.

Data






DNA Casework
3975
4103
4356
4773
4147
2841
3000
2973
3749
2958
7026
7238
7446
7515
6383
Specimens Examined
Preliminary Tests
Samples Analyzed
2021
2022
2023
2024
2025


DNA Casework Submissions
(Includes New and Supplemental Submissions for Given Case Types Only)
300
250
200
150
100
50
0
47
59
55
60
48
196
203
257
225
235
59
87
152
96
105
181
237
175
158
157
Homicide / Att. Homicide
Sexual Assault / Assault
Burglary / Robbery
Possession of Firearms
2021
2022
2023
2024
2025

Forensic Chemistry

Overview

The Forensic Chemistry Unit (FCU) consists of two distinct sections: the Controlled Substances Section and the Fire Debris Section.

The **Controlled Substances Section** analyzes evidence submitted by Delaware law enforcement agencies for the presence of controlled substances. These substances may be encountered in a variety of forms, including powders, liquids, food products, oils, waxes, plant material, paper, mushrooms, commercially manufactured pharmaceuticals, and clandestinely produced tablets or capsules. The section follows the Scientific Working Group for the Analysis of Seized Drugs (SWGDRUG) recommendations for analytical schemes used in the identification of controlled substances. In addition, an internationally accepted statistical sampling plan is used that allows chemists to make inferences about populations by testing a portion of exhibits with a 95% level of confidence. This sampling approach reduces case processing time while maintaining scientifically valid results.

The **Fire Debris Section** works directly with the Delaware State Fire Marshal's Office and other local agencies to analyze evidence related to arson investigations. Fire debris casework includes fires involving fatalities, incendiary fires, and other arson-related offenses. Evidence is prepared and analyzed in accordance with ASTM International Standard Practices and Test Methods and follows Organization of Scientific Area Committees (OSAC) standards for fire debris analysis. Fire debris analysis determines whether ignitable liquids are present and, if detected, identifies the classification of those liquids.

Staffing

The full complement of the Forensic Chemistry Unit includes one Laboratory Manager II, one Laboratory Manager I, ten full-time Analytical Chemists, and two Forensic Evidence Specialists.

During the reporting period, one Analytical Chemist resigned. This vacancy provided an opportunity to request reclassification of the position to a second Laboratory Manager I position to better support supervisory and operational needs within the unit. The reclassification request was approved in early 2026.

Casework and Accomplishments

Controlled Substances

In 2025, the Controlled Substances Section received 1198 cases, completing 1192 cases including seven which were terminated per DOJ. In the cases analyzed there were approximately 111,953 exhibits

submitted and, of those, about 16,128 were tested. The average turnaround time for cases completed in 2025 was approximately 9 days.

Fire Debris

In 2025, the DFS received nine fire debris cases and completed seven, with one case outsourced to a subcontracted laboratory for analysis. Across the seven completed cases, a total of 17 cans were examined. Due to the inherent complexity of fire debris evidence, analysis requires significantly more time compared to controlled substance testing. The average turnaround time for cases completed in-house was 48 days in 2025. This extended timeframe was partly attributable to the need for external technical review by another accredited laboratory, which added additional time to the overall process.

Accomplishments

In 2025, the FCU made significant progress toward validating a semi-quantitative method for delta-9-THC in plant material, which will ultimately enable differentiation between concentrations indicative of hemp versus marijuana. The unit also validated a new Gas Chromatograph/Mass Spectrometer (GC/MS) for fire debris casework, replacing an older instrument, and completed verification of three updated GC/MS instruments for the qualitative identification of controlled substances.

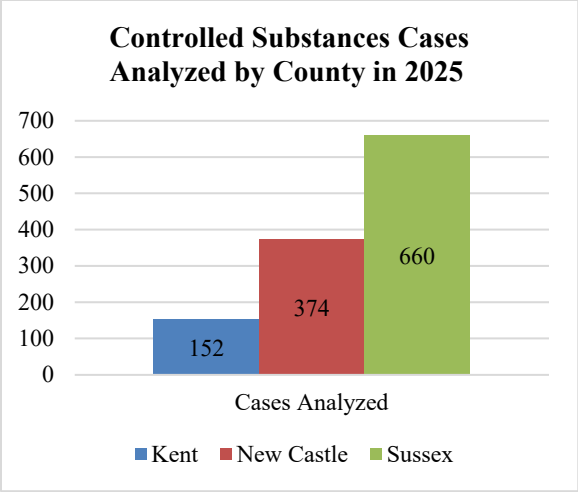
The addition of this instrumentation will allow the unit to advance previously delayed research and validation projects that had been on hold pending instrument availability. The FCU also implemented an improved analytical method for mushroom and mushroom-infused chocolate samples, resulting in cleaner data and more straightforward interpretation.

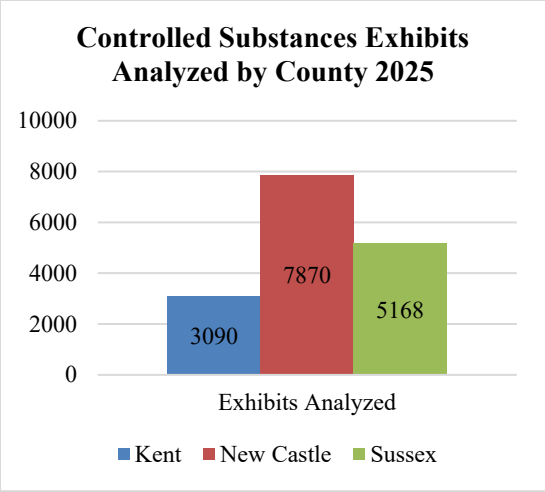
The unit remained committed to community outreach, participating in presentations for local high school and college students, as well as law clerks.

Data

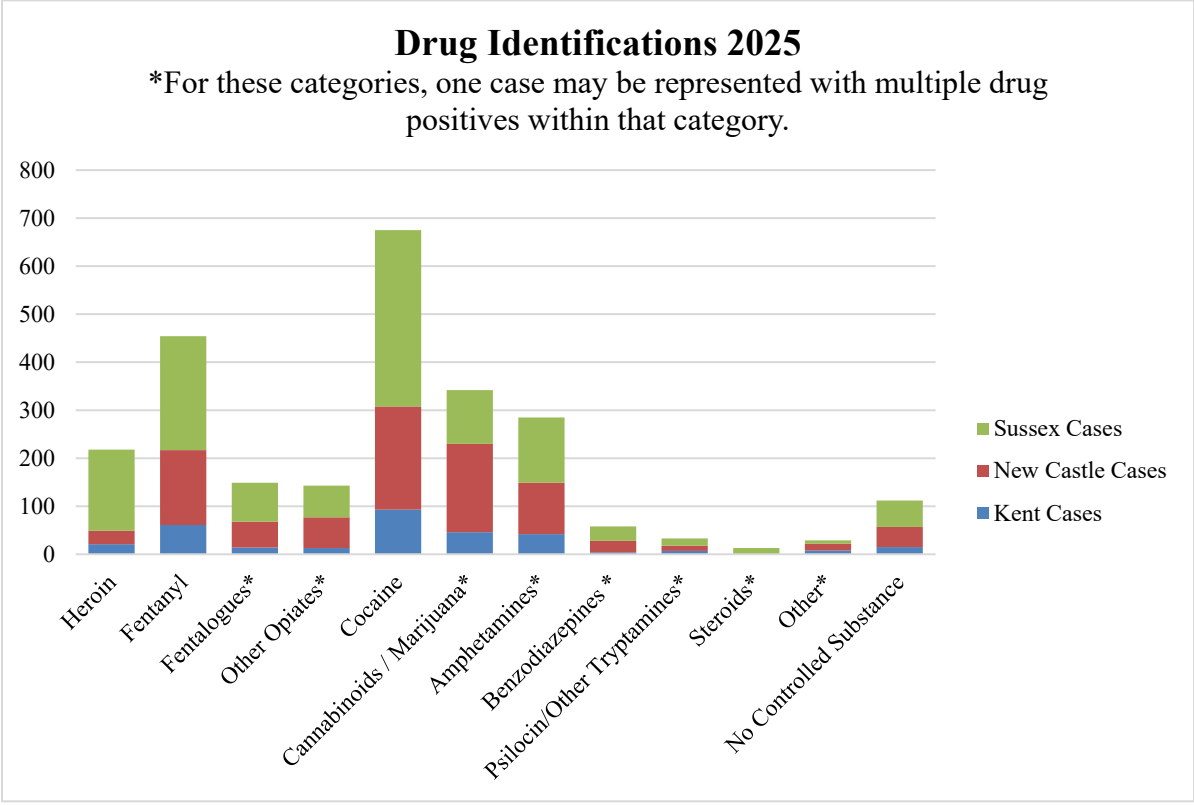
Controlled Substances

The charts below illustrate the breakdown, by county, of cases and exhibits analyzed by the DFS Controlled Substances Section. In 2025, Sussex County again submitted the most cases, accounting for 56% of the total cases analyzed in the section, but only 32% of the items analyzed. New Castle County brought in 32% of the cases but accounted for 49% of the items tested, submitting more items per case. Again, Kent County trailed in cases submitted (13%) and exhibits tested (19%).

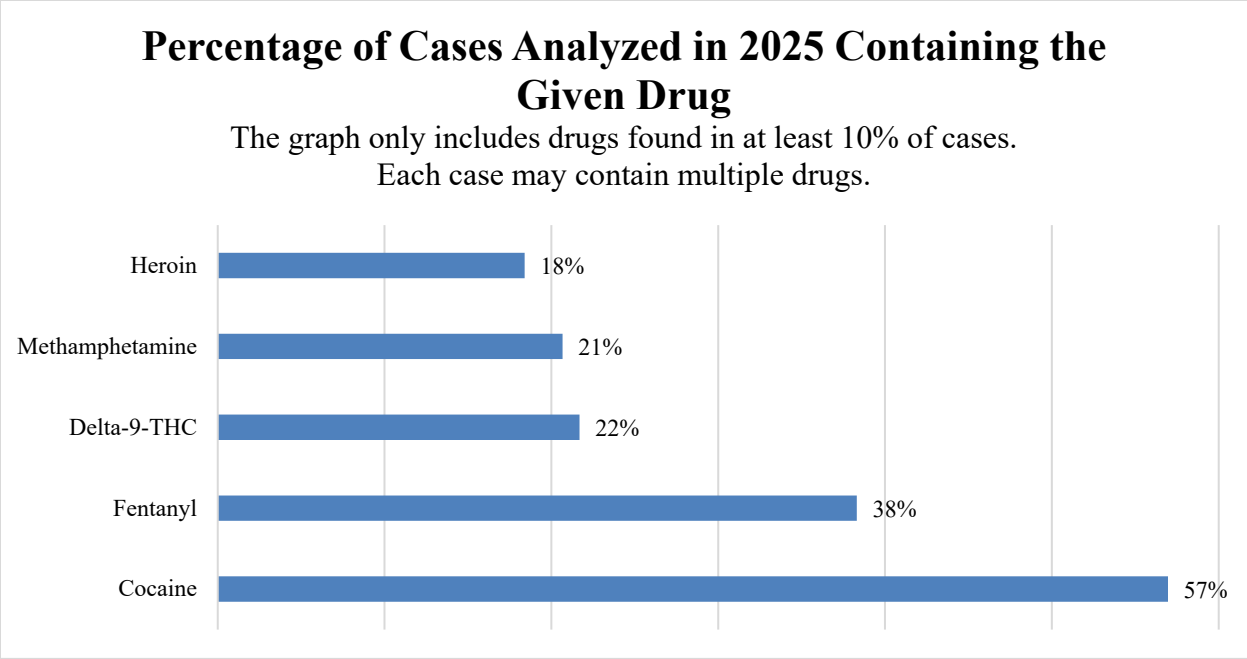


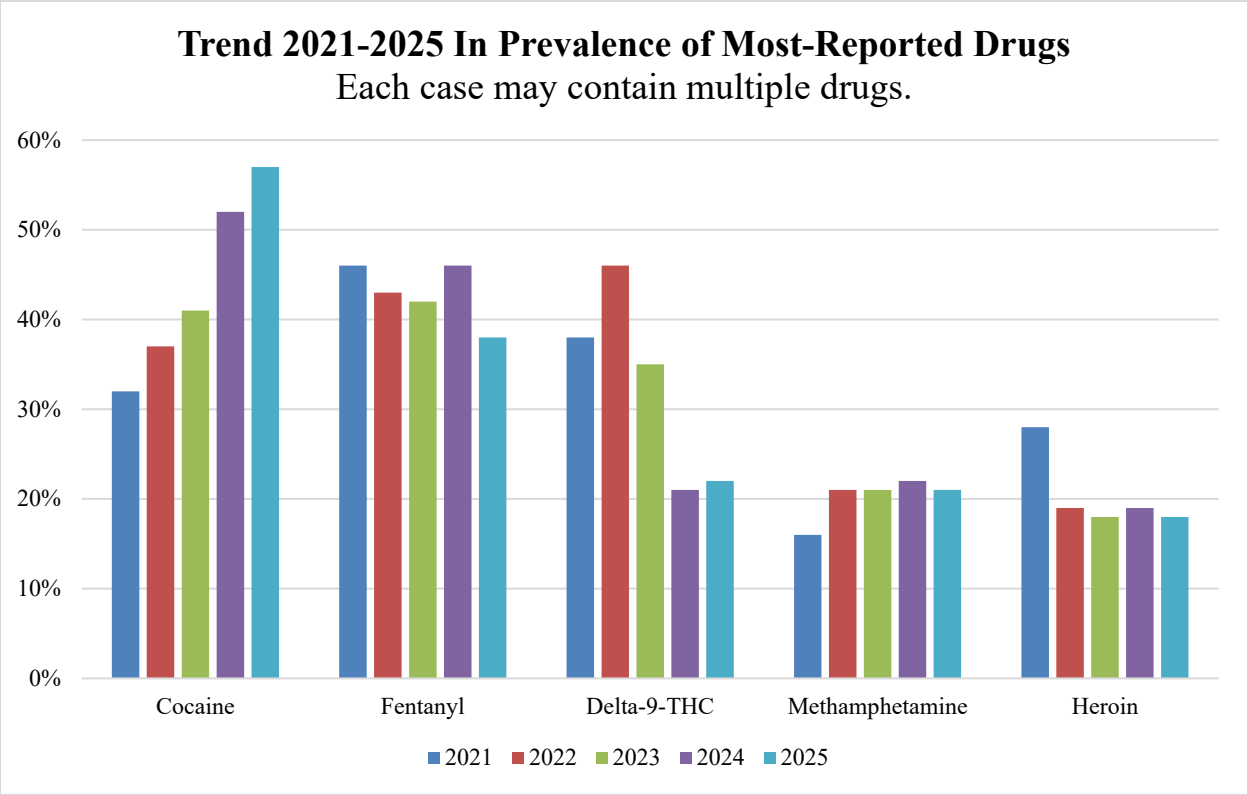


The chart below shows the number of cases found to contain the given substances in 2025. Note that one sample will often contain multiple drugs. For categories of drugs (such as fentalogues or steroids), one case may contain multiple drugs that fall into that category, and each individual compound is counted in the total for that category.



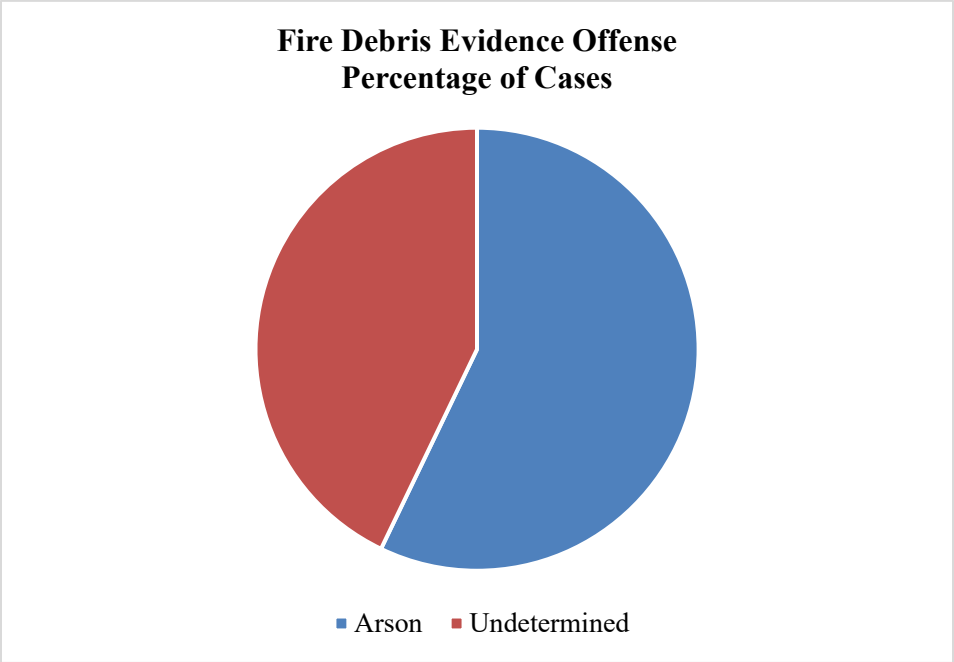
The following tables illustrate the percentage of cases analyzed in 2025 containing the most prevalent drugs, meaning those found in at least 10% of cases, and how the percentage has changed over time.


Percentage of Cases Analyzed in 2025 Containing the Given Drug
The graph only includes drugs found in at least 10% of cases.
Each case may contain multiple drugs.
Heroin
18%
Methamphetamine
21%
Delta-9-THC
22%
Fentanyl
38%
Cocaine
57%

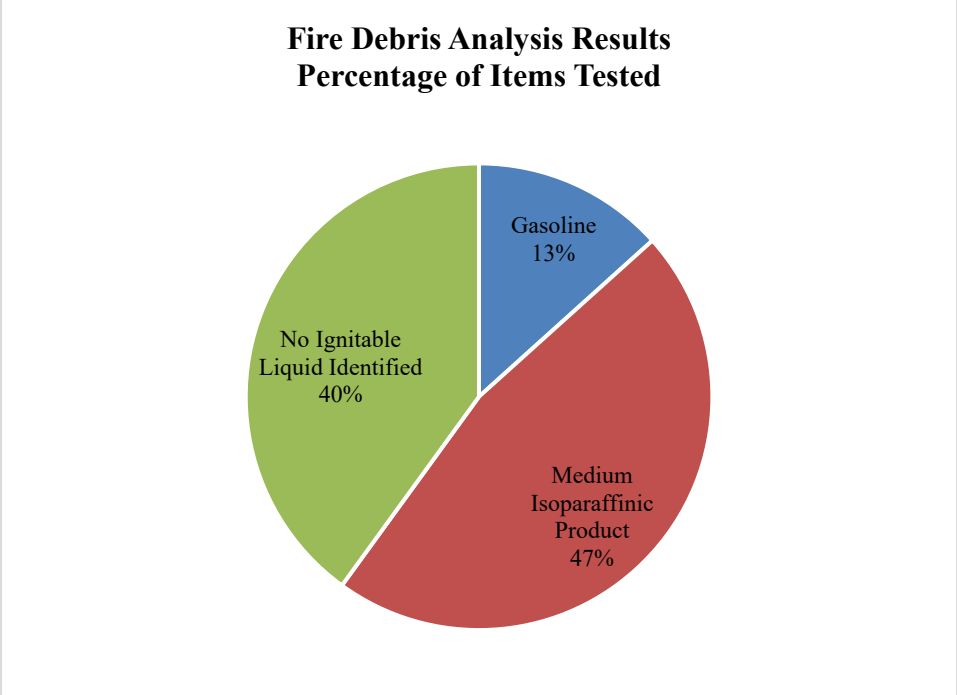

Trend 2021-2025 In Prevalence of Most-Reported Drugs
Each case may contain multiple drugs.
60%
50%
40%
30%
20%
10%
0%
Cocaine
Fentanyl
Delta-9-THC
Methamphetamine
Heroin
2021
2022
2023
2024
2025

Fire Debris

Evidentiary analysis is prioritized based on the offense associated with the evidence. The chart below displays the offenses of the evidence analyzed in 2025.



Testing for fire debris analysis results in a classification based on ASTM standard test methods. The following chart breaks down the classification results from analysis in 2025.



Conclusion

For answers to further questions, please see the DFS Website at https://forensics.delaware.gov/.