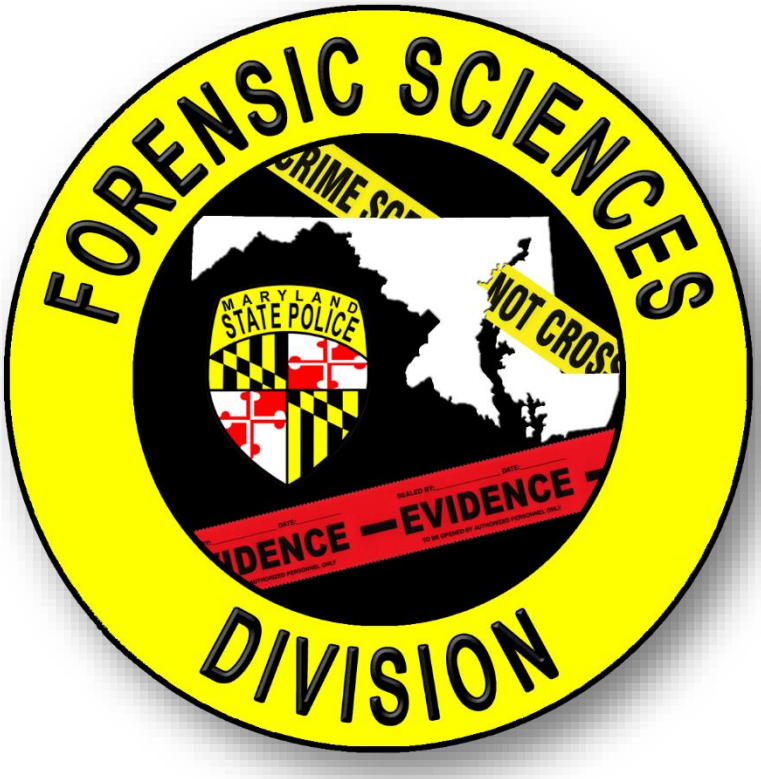


2019

ANNUAL REPORT

MARYLAND STATE POLICE

FORENSIC SCIENCES DIVISION

TABLE OF CONTENTS

FORENSIC SCIENCES DIVISION DESCRIPTION

The Maryland State Police Forensic Sciences Division (MSP-FSD) is an accredited, full-service forensic laboratory system offering analysis in the following disciplines: Latent Print/Impressions, Firearms/Toolmarks, Controlled Dangerous Substances (CDS), Toxicology, Biology, Trace Evidence, Questioned Documents and Crime Scene. Although the MSP-FSD operates under the administration of the Maryland State Police, the laboratory is available to provide service to all law enforcement agencies in Maryland. The MSP-FSD is accredited by ANSI-ASQ National Accreditation Board (ANAB) and licensed by the Maryland Department of Health, Office of Health Care Quality. As such, the laboratory utilizes generally accepted practices and procedures and conforms to ISO/IEC 17025 - General requirements for the competence of testing and calibration laboratories.

The MSP-FSD employs approximately 100 scientific and support staff and operates out of three laboratories located in Pikesville, Hagerstown and Berlin, as well as 14 Crime Scene Offices located strategically throughout the state. The MSP-FSD is comprised of the Office of the Director, the Operational Services Branch, and the Scientific Analysis Branch. The Office of the Director consists of the Director, Deputy Director, Assistant Commander and Quality Assurance/ Safety Manager. This administrative unit is responsible for the overall management of the Division. The Director oversees the management of the entire Division while the Assistant Commander oversees the Operational Services Branch and the Deputy Director oversees the Scientific Analysis Branch. The Operational Services Branch consists of the Crime Scene Section and the Forensic Support Services Section. The Scientific Analysis Branch consists of the following Sections: Pattern Evidence, Chemistry, Biology and Trace Evidence. The personnel within the Operational Services Branch and the Scientific Analysis Branch provide scientific support services to the criminal justice community.

The MSP-FSD operates under the following principles:

Core Values

Our dedication to integrity, fairness, and service ensures that our clients are always provided with reports and expert testimony that are informative, ethical, impartial, reliable and scientifically valid.

Mission Statement

The mission of the Forensic Sciences Division is to serve as the model laboratory for the analysis of forensic evidence in the State of Maryland by employing the following elements:

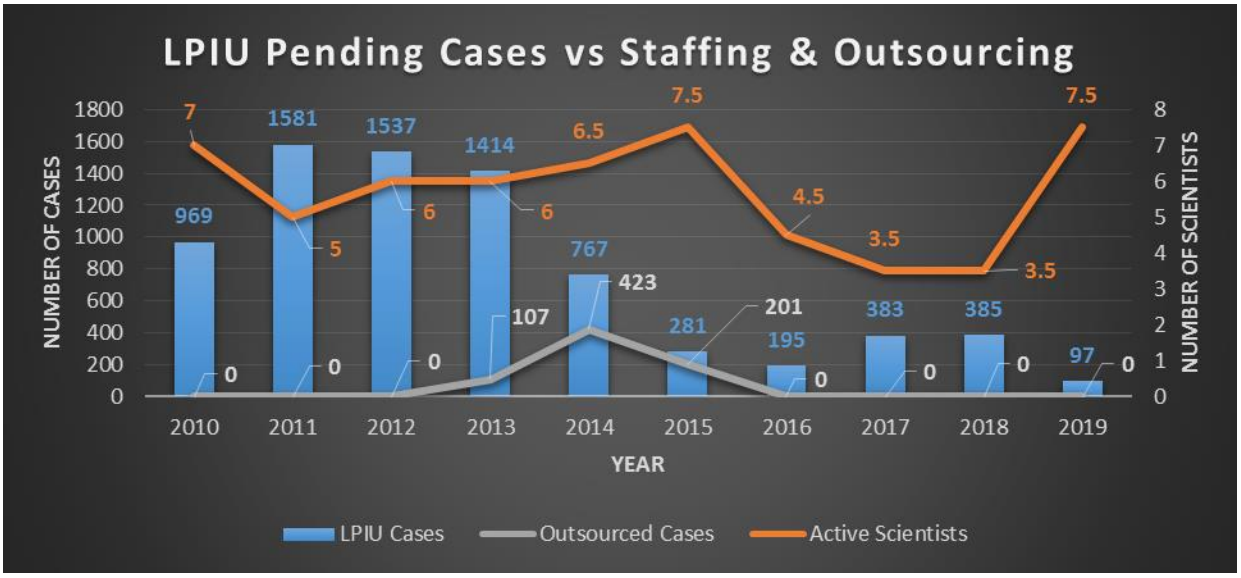
- Promotion of employee morale through a respectful, unified, and safe work environment.
- Meeting the forensic science needs of Maryland and its citizens.
- Maintaining ISO 17025 accreditation and compliance with all oversight requirements.
- Minimizing backlogs and turnaround time.
- Operating in a planned, prepared, and proactive manner.

Vision Statement

- To respect, acknowledge, value, challenge, and retain our employees.
- To collaborate with other laboratories and agencies and maximize the forensic services available to Maryland and its citizens.
- To promote state of the science operations through continuing education and the routine evaluation of current procedures.
- To eliminate backlogs and initiate cases upon submission.
- To maximize the public's return on investment by ensuring that sufficient resources are always available to the MSP-FSD and that those resources are always procured in the most fiscally responsible manner possible.

DIRECTOR'S SUMMARY

Daniel E. Katz



The Forensic Sciences Division's Annual Report is known to be a fact-filled overview of the previous year with a plethora of table and figures. This year will be no different; however, I want to make it a point that the above table is the first graphic that you see in the 2019 Annual Report. The reason for this is because it perfectly depicts the production challenges we often face, along with the strategic approach that FSD has successfully used in the past and continues to use today to address such challenges. As Director, my own personal goal for FSD is to create a crime laboratory that is innovative, technically sound, and customer-focused. We need to strive to be such a laboratory, because by doing so, we put ourselves in the best position to ensure that we provide our customers with quality results in a timely manner. Just as we can never sacrifice quality, we must understand that the results are not serving any purpose if they get to the customer too late. Issuing a report with the definitive forensic finding that makes a case in court does not mean anything if it is received by the attorney a week after the trial. Ultimately, whether we like it or not, we are a production laboratory.

So let's take a closer look at the above table. What do you see? This is a depiction of the Latent Prints / Impressions Unit over the past 10 years showing the correlation between pending cases, the number of active latent print examiners, and the use of outsourcing. In 2010, we have a pending caseload of 969 cases with 7 active scientists working in the unit. In 2011, the pending caseload sky-rockets to 1,581 as 2 senior-level examiners, who accounted for 35% of the unit's production, retired. In 2012, an additional examiner is added bringing the active staff up to 6 examiners, and a moderate decrease of 44 cases occurs. The following year in 2013, outsourcing efforts begin and a more significant decrease of 123 cases occur. Then, in 2014, the pending caseload plummeted by 46% down to 767 cases; the result of a multi-tiered plan starting to come

together. First, the staff increased by half an examiner. It is worth noting that the half examiner was Lindsey Schultz, who left as a full time employee one week and came back as a part time employee the next week. This was a pivotal point as Lindsey was our highest producer, but she felt she could no longer work full time as she was starting to raise a family. While State government does not often afford us much flexibility, we came up with the option for Lindsey to take a part time position, which she continues to still hold 6 years later. Let's just say that half a Lindsey goes a long way, especially when combined with being able to outsource 423 cases. In 2015, we added an additional examiner and outsourced an additional 201 cases resulting in only 281 pending cases at the end of the year, an 82% decrease from the peak in 2011. Unfortunately, another round of retirements hit in 2016, along with a resignation in 2017, bringing staffing down to our lowest point of only 3.5 active examiners. Not surprisingly, pending caseloads did go up in 2017 and 2018, but not astronomically. It was easier to manage the staffing losses this time due to the strong leadership of Pikesville Supervisor Stephanie Roberg, Hagerstown Supervisor Corrie Mellott, and Pattern Evidence Manager Zach Suber, all of whom promoted a production oriented culture. In 2019, under the guidance of training coordinator Alex Mankevich, 4 additional examiners (Stacey Wise, Jeanine Hotchkin, Taylor Lentz, and Jennifer Lewis) were signed off to perform independent casework. We find ourselves at the end of 2019 in the desirable position of having an all-time high of 7.5 active examiners (soon to be 8.5 with the recent addition of Patricia Rogers) and an all-time low of 97 pending cases.

I share this information with you for four reasons. First, I could not be more proud of the Latent Prints / Impressions Unit and the perseverance and dedication that they have shown in getting to this point. Second, you need to know that it is possible to make it to the other side as long as you see the big picture, have a plan, and commit yourself to success… even when there appears to be no light at the end of the tunnel. Third, we have established a proven strategy for dealing with backlogs that we are continuing to apply in other units. It is clear that there is a direct correlation between staffing and production, and in instances when we have vacancies or are waiting for new hires to complete our extensive training programs, we will take advantage of outsourcing to get us through. Outsourcing is not the end all and be all, but it can be used effectively and strategically and it should not be seen as a negative. Lastly, when we get to the sweet spot, like we have in the Latent Prints / Impression Unit, we do not want to let up. That is the point when we have the opportunity to further optimize the efficiency and effectiveness of our operations. Doing so will ensure that the backlogs do not return, the turnaround times are minimized, and the amount of information that we can provide to our customers is maximized.

In conclusion, congratulations to all of the FSD team for another amazing year. Appreciate the little wins and do not get lost in the setbacks. As you have seen, it can be a long road, but eventually you get there if you have a vision and stay focused.

Let's strive for perfect vision and focus in 2020!

STATISTICAL SUMMARY

Activity Summary - Operational Services Branch			
	2017	**2018**	**2019**
Crime Scene Section			
Crime Scenes Processed	620	653	674
Central Receiving Unit			
CDS cases submitted for destruction	7,296	8,382	11,129
Forensic Cases Received	14,061	14,023	13,952
Photography Unit			
Special Assignments	268	225	211
VeriPic/Color Film Rolls Processed	974	634	868
Color Prints	6,217	5,779	5,073
ID Cards	609	750	657

Activity Summary – Scientific Analysis Branch			
	2017	2018	2019
Latent Prints/Impressions			
Cases Received	1,176	1,014	1,060
Cases Completed	988	1,019	1,348
MAFIS Latent Hits	323	324	540
Case Uploads to MAFIS	461	456	624
Latent Print Uploads to MAFIS	1,039	1,227	1,640
Firearms/Toolmarks			
Cases Received	678	780	811
Cases Completed	905	822	921
Number of Firearms for Handgun Roster Board	108	130	181
Case Uploads to NIBIN	437	575	833
Number of NIBIN Leads Generated	69	32	81
Number of NIBIN Hits Confirmed	39	9	2
Operation Test Shot Samples Completed[1]	272	273	305
Walk-In Test Fires (# of Firearms)	253	198	75
CDS			
Cases Received in Pikesville	3,678	3,711	3,468
Cases Received in Berlin	2,672	2,779	2,387
Cases Received in Hagerstown	2,190	1,957	840
Subtotal Cases Received	8,540	8,447	6,695
Cases Received by Allied Forensic Scientists[2]	1,379	1,541	2,835
Total Cases Received	9,919	9,988	9,530
Cases Completed in Pikesville	3,214	3,238	3,867
Cases Completed in Berlin	2,594	2,826	2,207
Cases Completed in Hagerstown	1,551	1,804	800
Subtotal Cases Completed	7,359	7,868	6,874
Cases Completed by Allied Forensic Scientists[2]	1,371	1,431	3,103
Total Cases Completed	8,730	9,299	9,977
Toxicology			
Blood Alcohol Cases Received	692	683	789
Blood Drug Cases Received	388	481	660
Total Cases Received	1,080	1,164	1,449
Blood Alcohol Cases Completed	806	664	713
Blood Drug Cases Completed	519	435	458
Total Cases Completed	1,325	1,099	1,171
Biology			
Submitted Cases Received	673	639	648
Directly Outsourced Cases Received	363	265	298
Total Cases Received	1,036	904	946
Submitted Cases Completed	670	640	626
Directly Outsourced Cases Completed	319	266	266
Total Cases Completed	989	906	892
Maryland Case CODIS Hits	986	940	872
Arrested/Charged CODIS Hits	133	128	130
Convicted Offender Uploads to CODIS	4,246	3,828	3,787
Arrested/Charged Uploads to CODIS	3,629	2,608	2,884
Case Uploads to CODIS	1,149	1,057	958

Activity Summary – Scientific Analysis Branch			
	2017	2018	2019
Trace Evidence			
Cases Received	151	138	133
Cases Completed	142	151	124
Question Documents			
Cases Received	21	35	23
Cases Completed	34	30	27

1 - Operation Test Shot Samples Completed for the year 2018 were estimated based on the proportion of the statistical Operation Test Shot samples completed for both 2017 and 2019.

2 - Allied Forensic Scientists = Forensic Scientists hired by allied agencies or other governmental entities who are authorized to perform CDS analysis in FSD facilities under the provisions provided for in a Memorandum of Understanding.

Scientific Analysis Branch Casework Summary								
Unit	**Cases Received**		**MSP Cases Received**		**Allied Agency Cases Received**		**Cases Completed**	
	2018	**2019**	**2018**	**2019**	**2018**	**2019**	**2018**	**2019**
Latent Prints/Impressions	1,014	1,060	22%	18%	78%	82%	1,019	1,348
Firearms/Toolmarks	780	811	29%	34%	71%	66%	822	921
CDS-Pikesville	3,711	3,468	30%	33%	70%	67%	3,238	3,867
CDS-Berlin	2,779	2,387	29%	29%	71%	71%	2,826	2,207
CDS-Hagerstown	1,957	840	30%	50%	70%	50%	1,804	800
CDS-Allied[1]	1,541	2,835	29%	22%	71%	78%	1,431	3,103
Toxicology	1,164	1,449	33%	36%	67%	64%	1,099	1,171
Biology- Submitted	639	648	20%	25%	80%	75%	640	626
Biology- Direct Outsourcing	265	298	1%	2%	99%	98%	266	266
Trace Evidence	138	133	42%	44%	58%	56%	151	124
Questioned Documents	35	23	14%	22%	86%	78%	30	27
Totals	**14,023**[2]	**13,952**[2]	**28%**	**29%**	**72%**	**71%**	**13,326**	**14,460**

1- CDS-Allied = Forensic Scientists hired by allied agencies or other governmental entities who are authorized to perform CDS analysis in FSD facilities under the provisions provided for in a Memorandum of Understanding. In 2018, Frederick Co. cases were assigned to CDS-Hagerstown while a new Frederick Co. SAO Allied Forensic Scientist was in training. In 2019, the new Frederick Co. SAO Allied Forensic Scientist completed training and was assigned the Frederick Co. cases.

2- Cases that are routed to multiple units are counted as a unique case for each unit.

Laboratory Backlogs and Turn Around Times				
Casework Type	**Pending Caseload (Cases)[1]**	**Backlog (Cases pending >30 days)[1]**	**2019 Turn Around Time (Calendar Days)[2]**	**4th Quarter Turn Around Time (Calendar Days)[3]**
Latent Prints/Impressions	97	45	81	49
Firearms/Toolmarks	448	395	237	303
CDS-Pikesville	956	801	115	147
CDS-Berlin	526	434	69	99
CDS-Hagerstown	396	331	102	94
CDS-Allied	751	627	127	191
Toxicology	457	337	74	91
Biology-Submitted	207	162	107	104
Biology-Directly Outsourced	116	85	122	108
Trace Evidence	16	4	24	29
Question Documents	4	0	144	37
Totals	**3,974**	**3,221**	**106**	**131**

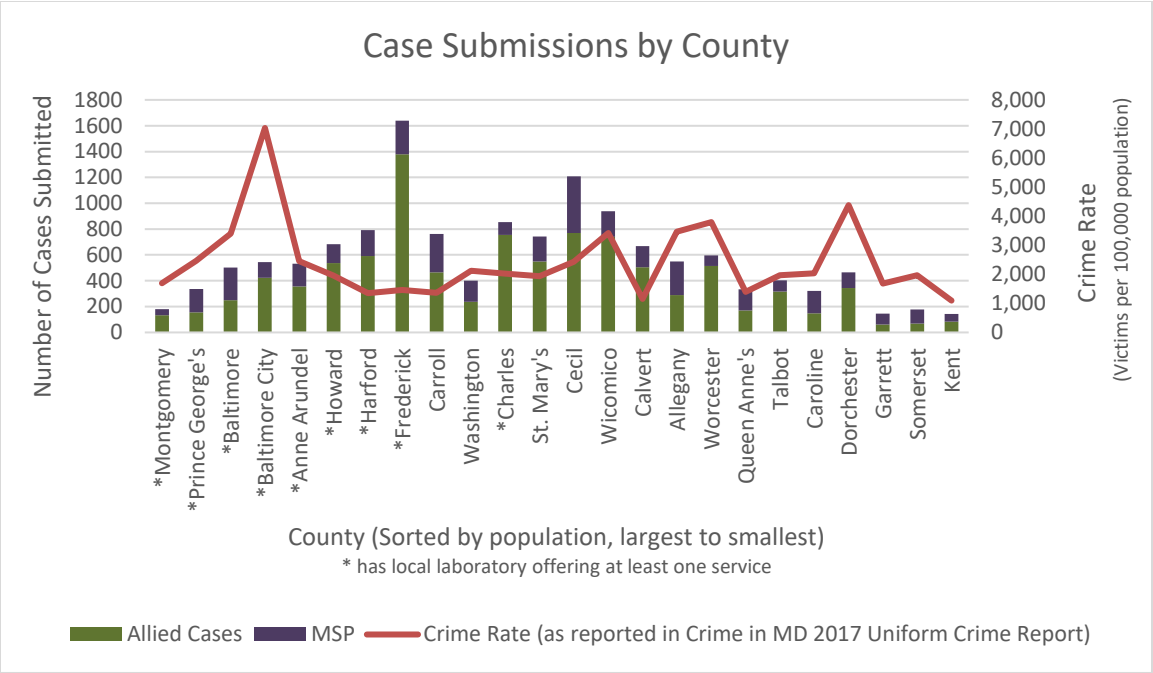
1. Number of cases as of last day of calendar year.
2. Average turnaround time for cases completed throughout the calendar year.
3. Average turnaround time for cases completed during the 4th quarter.

Quantity of FSD Requests by County						
County	2018			2019		
	Cases Submitted to Lab	Crime Scenes	Total	Cases Submitted to Lab	Crime Scenes	Total
Frederick	1,589	19	1,608	1,639	25	1,664
Cecil	1,142	52	1,194	1,208	69	1,277
Wicomico	1,058	64	1,122	939	59	998
Charles	1,031	2	1,033	854	3	857
Harford	874	15	889	793	15	808
Carroll	693	37	730	762	43	805
St. Mary's	520	7	527	742	11	753
Howard	711	4	715	684	6	690
Calvert	764	9	773	669	8	677
Worcester	763	30	793	597	24	621
Allegany	510	52	562	548	64	612
Baltimore City	267	29	296	544	49	593
Anne Arundel	579	35	614	531	25	556
Baltimore	551	53	604	502	50	552
Dorchester	468	11	479	464	23	487
Talbot	350	47	397	404	34	438
Washington	338	17	355	400	24	424
Prince George's	354	17	371	335	26	361
Queen Anne's	448	32	480	334	20	354
Caroline	263	21	284	321	20	341
Somerset	197	65	262	177	54	231
Montgomery	171	3	174	180	4	184
Garret	176	20	196	145	10	155
Kent	155	11	166	144	7	151
Statewide/Not Determined*	27	0	27	33	1	34
Out of State	24	1	25	3	0	3
Totals	**14,023**	**653**	**14,676**	**13,952**	**674**	**14,626**

*****County where offense occurred was not provided to FSD.

Quantity of Laboratory Submissions to FSD Ranked by MSP Installation			
2019 Rank	**2018 Rank**	**MSP Installation**	**Counties Served**
1	1	MSP-CID/CED	Statewide
2	2	MSP-Easton	Caroline, Dorchester, Talbot
3	7	MSP-Westminster	Carroll
4	3	MSP-North East	Cecil
5	9	MSP-Frederick	Frederick
6	6	MSP-Cumberland	Allegany
7	4	MSP-Centerville	Kent, Queen Anne's
8	5	MSP-Golden Ring	Baltimore
9	8	MSP-Leonardtown	St. Mary's
10	10	MSP-Prince Frederick	Calvert
11	11	MSP-Hagerstown	Washington
12	13	MSP-JFK Highway	Cecil, Harford, Baltimore
13	6	MSP-Salisbury	Wicomico
14	15	MSP-Waterloo	Howard
15	14	MSP-Princess Anne	Somerset
16	12	MSP-Bel Air	Harford
17	16	MSP-College Park	Prince George's
18	12	MSP-Glen Burnie	Anne Arundel
19	16	MSP-La Plata	Charles
20	17	MSP-McHenry	Garrett
21	16	MSP-Berlin	Worcester
22	16	MSP-Forestville	Prince George's
23	18	MSP-Annapolis	Anne Arundel
24	20	Office of State Fire Marshall	Statewide
25	19	MSP-Rockville	Montgomery
26	22	MSP-DED/C3I	Statewide
27	21	MSP-Homicide	Statewide
28	23	MSP-Crash Team	Statewide
29	24	MSP-CVED	Statewide

Quantity of Laboratory Submissions to FSD Ranked by Allied Agency County		
2019 Rank	**2018 Rank**	**County**
1	1	Frederick
2	5	Cecil
3	2	Charles
4	4	Wicomico
5	6	Harford
6	12	St. Mary's
7	8	Howard
8	3	Worcester
9	7	Calvert
10	9	Carroll
11	17	Baltimore City
12	11	Anne Arundel
13	10	Dorchester
14	16	Talbot
15	13	Allegany
16	14	Baltimore
17	18	Washington
18	15	Queen Anne's
19	19	Prince George's
20	22	Caroline
21	20	Montgomery
22	21	Kent
23	24	Somerset
24	23	Garrett
25	25	Statewide
26	26	Out of State


Case Submissions by County
Number of Cases Submitted
1800
1600
1400
1200
1000
800
600
400
200
0
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
Crime Rate
(Victims per 100,000 population)
*Montgomery
*Prince George's
*Baltimore
*Baltimore City
*Anne Arundel
*Howard
*Harford
*Frederick
Carroll
Washington
*Charles
St. Mary's
Cecil
Wicomico
Calvert
Allegany
Worcester
Queen Anne's
Talbot
Caroline
Dorchester
Garrett
Somerset
Kent
County (Sorted by population, largest to smallest)
* has local laboratory offering at least one service
Allied Cases
MSP
Crime Rate (as reported in Crime in MD 2017 Uniform Crime Report)

CRIME SCENE SECTION

The Crime Scene Section (CSS) is responsible for processing crime scene evidence to include identifying, collecting, preserving, photographing, sketching, storing and transporting evidence into the laboratory facilities. Bloodstain pattern analysis, facial composite generation and bullet trajectory analysis are also available. Crime Scene Technicians (CSTs) work closely with criminal investigators, processing crime scenes and providing technical assistance, thereby allowing investigators the opportunity to conduct thorough investigations. Technicians are available to Maryland's law enforcement community twenty-four hours a day, seven days a week. The CSS also provides assistance to neighboring states upon request. The Section Manager oversees the overall operations of the Crime Scene Section. When fully staffed, there are three Regional Supervisors and five Crime Scene Technicians assigned to each of the three regions: Western, Central, and Eastern. The Crime Scene Section was nearly fully staffed in 2019, which may explain the increase in the number of crime scenes handled this year.

Most of the evidence examined by the MSP-FSD is transported by CSTs. They not only transport evidence for the majority of the Department's installations, but also for many of the local police and sheriff's departments. These transports are to and from the Pikesville Laboratory as well as the two satellite laboratories located in Hagerstown and Berlin.

The CSS is involved in the MSP-FSD Disaster Identification Team (DIT), which is available to assist the Office of the Chief Medical Examiner in locating, marking, photographing, and identifying disaster victims.

The technical abilities and expertise of the CSTs are often utilized for training. They provide instruction at the Maryland State Police Academy, Natural Resources Police Academy, various in-service law enforcement agency programs, and provide lectures during training and seminars hosted by allied police departments.

Law enforcement personnel provided valuable feedback to the CSTs and their supervisors by submitting a large volume of Technician Evaluation Forms in 2019. These evaluations were consistently highly rated and praised CSS personnel for their exemplary service and performance.

CRIME SCENE REGIONAL UNITS

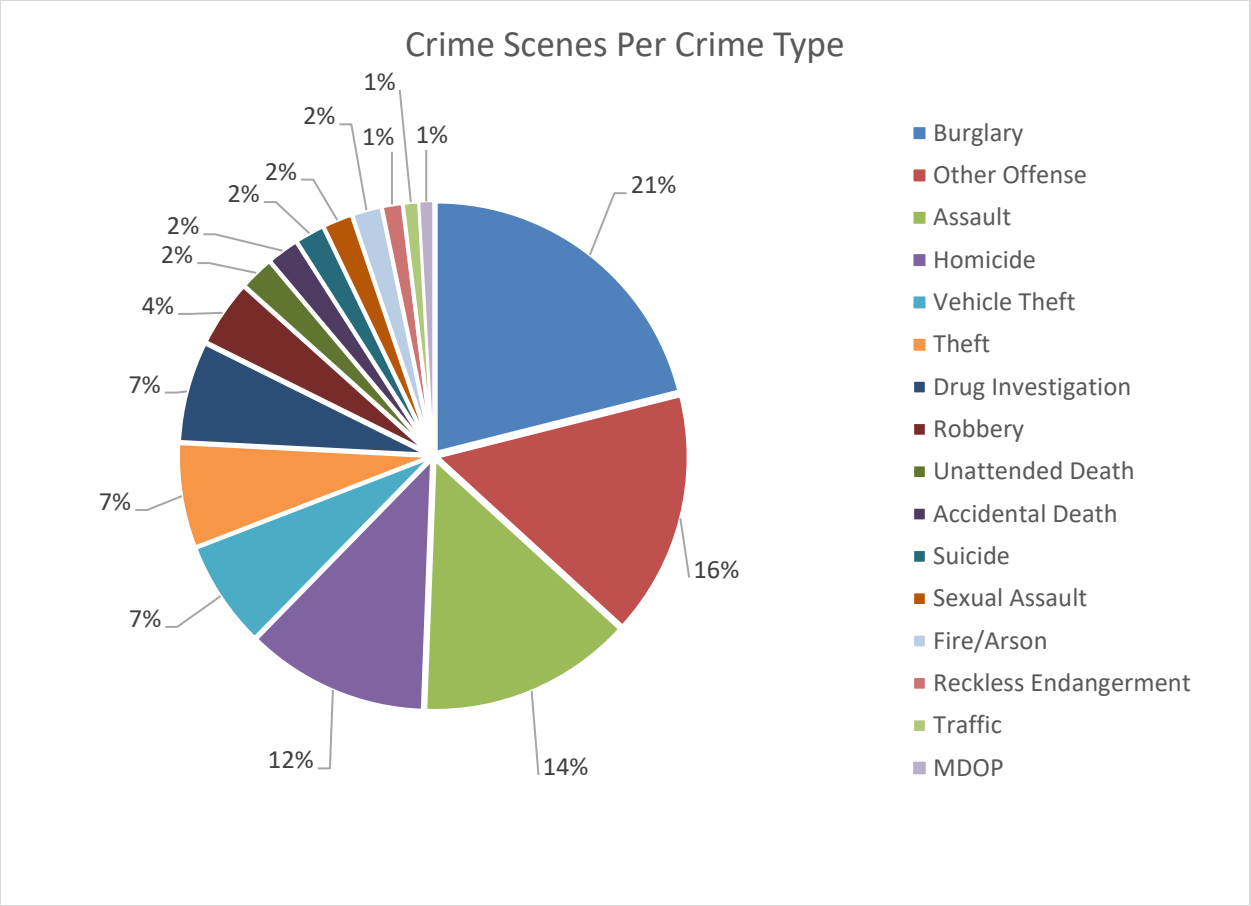
Western Region Unit: Allegany, Frederick, Washington, Carroll, Howard, Montgomery, and Garrett Counties

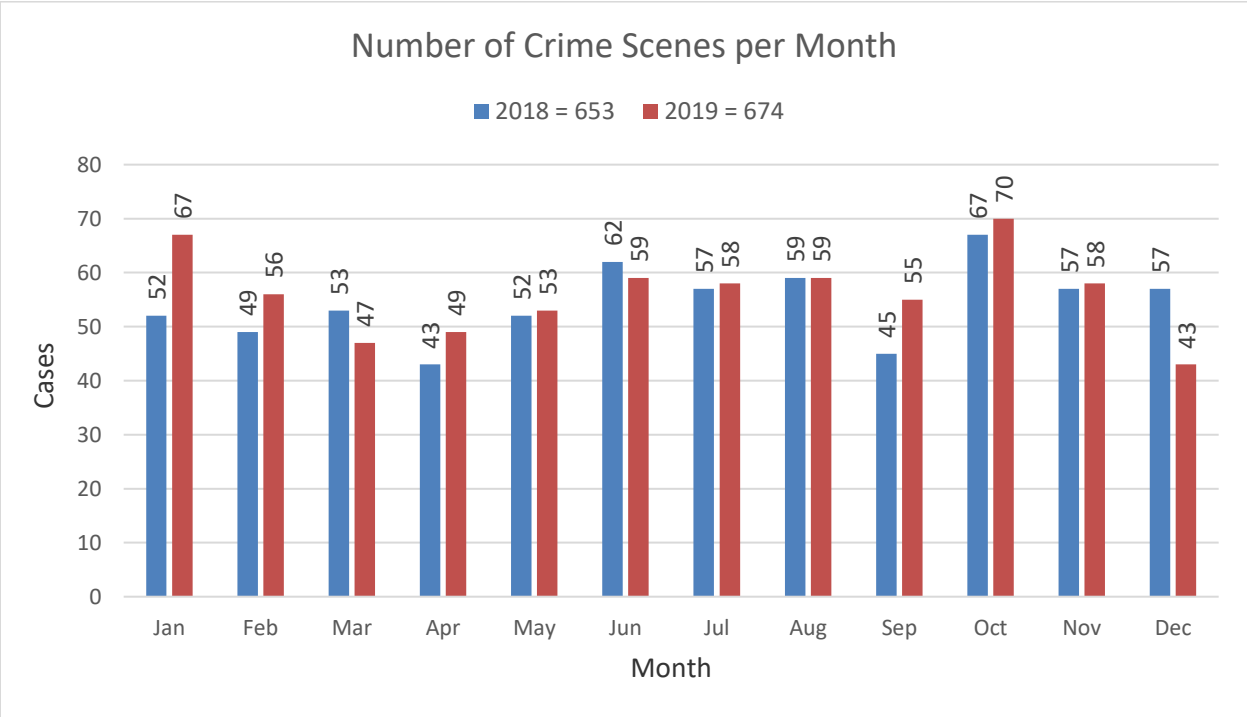
Central Region Unit: Anne Arundel, Harford, Baltimore, Cecil, Prince George's, Calvert, Charles, St. Mary's Counties as well as Baltimore City (Maryland Port Authority, Maryland Transportation Authority, DOC)

Eastern Region Unit: Kent, Queen Anne's, Talbot, Caroline, Dorchester, Wicomico, Somerset and Worcester Counties

Crime Scene Summary								
Crime Scene Region	**Scenes Processed**		**MSP Scenes**		**Allied Agency**		**Scene Assists**	
	2018	**2019**	**2018**	**2019**	**2018**	**2019**	**2018**	**2019**
Eastern	295	185	58%	56%	42%	44%	25	6
Western	124	195	63%	62%	37%	38%	17	29
Central	234	293	74%	66%	26%	34%	17	15
Totals	**653**	**674**	**64%**	**61%**	**36%**	**39%**	**59**	**40**

Total Number of Crime Scenes Processed per County	
County	**Total Crime Scenes**
Cecil	69
Allegany	64
Wicomico	59
Somerset	54
Baltimore	50
Baltimore City	49
Carroll	43
Talbot	34
Prince George's	26
Anne Arundel	25
Frederick	25
Worcester	24
Washington	24
Dorchester	23
Queen Anne's	20
Caroline	20
Harford	15
St. Mary's	11
Garret	10
Calvert	8
Kent	7
Howard	6
Montgomery	4
Charles	3
Statewide/Not Determined*	1
TOTAL	**674**


Crime Scenes Per Crime Type
21%
16%
14%
12%
7%
7%
7%
4%
2%
2%
2%
2%
1%
1%
1%
Burglary
Other Offense
Assault
Homicide
Vehicle Theft
Theft
Drug Investigation
Robbery
Unattended Death
Accidental Death
Suicide
Sexual Assault
Fire/Arson
Reckless Endangerment
Traffic
MDOP


Number of Crime Scenes per Month
2018 = 653
2019 = 674
Cases
Month
Jan 52 67
Feb 49 56
Mar 53 47
Apr 43 49
May 52 53
Jun 62 59
Jul 57 58
Aug 59 59
Sep 45 55
Oct 67 70
Nov 57 58
Dec 57 43

NOTEWORTHY CASES

Western Region

On January 1, 2019, CST Jeudy was requested by the C3I Investigation Unit to process phones involved in a home invasion. The phones were stolen during the home invasion and thrown onto someone's property several blocks away. Around the same time frame, several convenience stores were robbed and the investigator believed the same suspects that were involved in the home invasion were involved with these robberies. CST Jeudy processed the phones and obtained latent prints. The latent prints were analyzed and a suspect was developed; this suspect was not known to the investigator beforehand. The investigator interviewed the suspect, which resulted in his arrest. This suspect also implicated a second individual who was involved in both the home invasion and the robberies of the convenience stores. The second suspect was well known to law enforcement and had committed numerous past crimes, but continually alluded conviction. The case went to trial and the suspect who had alluded conviction was found guilty and sentenced to 15 years.

On September 12, 2019, CST Buck responded to a residence in Sykesville for a suspected sexual assault that was being investigated by the MSP Westminster Barrack. The victim informed investigators that she had invited a stranger, whom she met earlier that day, into her home and when she went to go to bed, the stranger laid down with her and forcefully raped her multiple times. According to the victim's account, the unknown suspect and victim had been drinking from two mugs earlier in the evening. CST Buck located, processed and successfully lifted multiple latent prints from the mugs which later identified the unknown suspect.

Central Region

On August 14, 2019, CST Myer responded to the La Plata Barrack to process a vehicle involved in a fatal hit and run motor vehicle accident. This case involved a pedestrian who had been struck and killed by a vehicle while walking along southbound Maryland Route 5 in Waldorf. The suspect vehicle fled from the scene and was later located by a neighbor who advised that he witnessed the owner washing the vehicle earlier on that day. A search warrant was obtained and CST Myer photographed and processed the vehicle for latent fingerprints. She also searched the exterior of the vehicle and located what she believed to be a possible bloodstain on the front passenger door. This stain was collected and submitted to the Biology Section of the MSP-FSD for analysis. On October 17, 2019, a biology report was sent out indicating that the bloodstain was identified back to the victim which confirmed that the vehicle that was the striking vehicle. The operator of the vehicle has not yet been charged due to his whereabouts being unknown.

On February 20, 2019, it was reported that malicious destruction of property and theft of a firearm had occurred to a MSP-issued 2018 Ford Explorer. CST Iman responded and processed the vehicle. Multiple DNA swabs and a piece of fabric from the broken glass window were recovered and submitted for analysis. A search of the Maryland DNA Database by FSD resulted in a match between a Maryland individual charged with a qualifying crime and DNA obtained from the vehicle. This DNA "hit" led to a warrant being issued.

Eastern Region

On May 1, 2019, CST Woods responded to the scene of a homicide in Cambridge. Upon the arrival of the first responding officer, the suspect was observed dragging the victim down a flight of stairs and out of a doorway into an alleyway. At that time the suspect claimed that the victim was a local homeless drug addict that was discovered passed out in the hallway. Further investigation ensued. During the investigation it was discovered that two suspects had beaten the victim in the hallway of the apartment building. A bloody handprint that was discovered on the wall of the hallway was collected and later identified to the suspect who was observed dragging the victim. Several other items were also collected from the scene, suspects and victim including: DNA swabs, clothing, a hammer, and a towel with suspected blood stains. Analysis by the MSP-FSD Biology Section resulted in the DNA of the victim being found on one of the suspect's pants and a towel collected from the suspect's apartment. Further analysis of swabs collected from the victim's right hand fingernails resulted in the DNA of one of the suspects being identified. The two suspects were charged with the murder of the victim and the trials are still pending.

On January 18, 2019, CST Zack was called upon to assist CST Kortchak regarding a homicide that took place in Federalsburg, MD. The victim was located inside of a shed with injuries to her head. During the investigation, it was determined that the suspect had attempted to clean up the residence where the actual murder had taken place. A vehicle sitting outside of the residence was found to contain suspected blood as well as hair on the trunk. Additional evidence containing blood, bloody towels, as well as a hammer were located inside of the shed with the victim. Processing of the scene included photographing and sketching the scene, collecting swabs of suspected blood, and collecting the hammer as well as other items of evidentiary value. On January 21st, the MSP-Homicide Unit requested that the house be examined using luminol to document the scene further. While applying luminol, photographs were taken and bare footprints were observed on the floor of the residence. The suspect was subsequently arrested, convicted and sentenced to 40 years.

FORENSIC SUPPORT SERVICES SECTION

This Section consists of the Photography Unit, the Central Receiving Unit and the Administrative Support Unit. These units play an important role in allowing the FSD to function as efficiently and effectively as possible.

The Photography Unit is supervised by one Forensic Photographer Supervisor and is staffed by one Forensic Photographer II. The Central Receiving Unit is supervised by one Administrative Officer (CRU Supervisor) and is staffed by five MSP Forensic Inventory Control Officers (MSP-FICO's). The Administrative Support Unit is supervised by one Administrative Specialist III and is staffed by one Administrative Specialist II. A contractual Office Secretary III joined the team in March 2019.

PHOTOGRAPHY UNIT

The Photography Unit provides photographic services to the Maryland State Police.

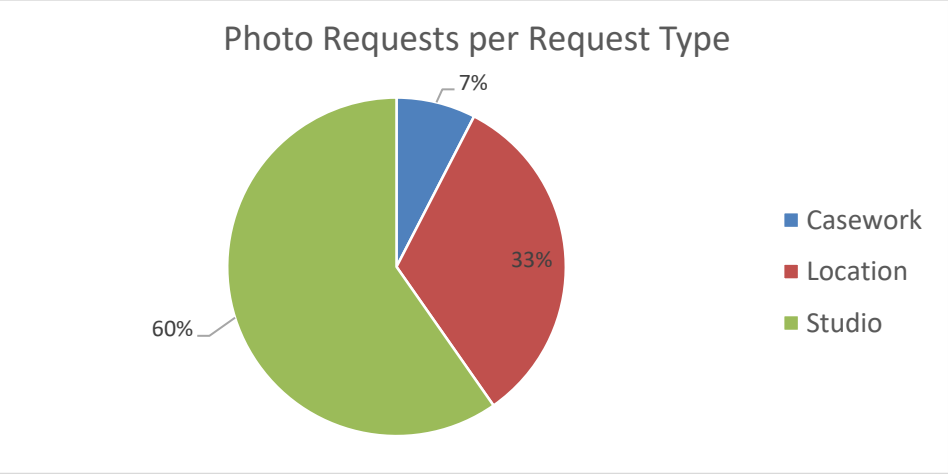
Duties within the unit include the development and printing of images related to crime scenes and motor vehicle accidents for the Maryland State Police and other agencies. This unit also serves as the VeriPic system administrator. Reprints or CDs are provided to various divisions and units throughout the Department upon request. Other duties include public relations photos, expungement requests relating to the digital Barrack Identification Photo System, ID card production, and the support of other units within the Department. The Photography Unit assisted in creating the 2019 MSP Safety Calendar. The calendar not only provides tips on safety for the Department, but also is a free schedule planner that staff can use to organize their workdays. In 2019, Unit staff also helped create the MSP Civilian Driver Safety training video. This video is presented during new hire orientations, and all civilians are required to watch.

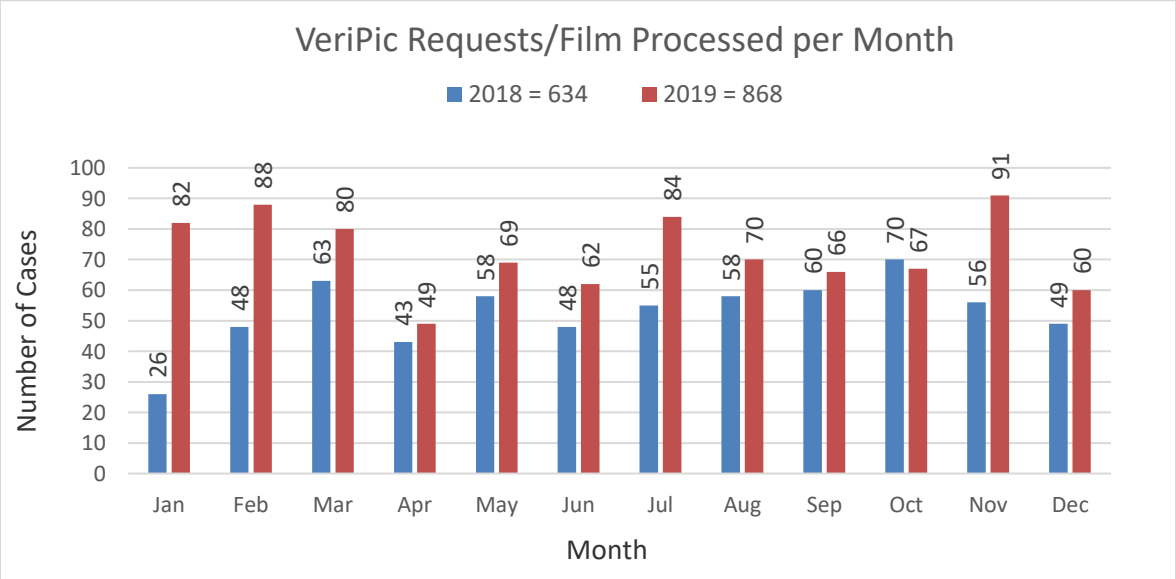
The Supervisor of the Photography Unit, with some assistance from unit members, did extensive research, retouching, planning, presenting the project to the Colonel directly, and execution of the project from inception to presentation of the Maryland State Police "First's" Program. The program is an ongoing process to identify, verify, document and honor those individuals who were 'the first' within the Maryland State Police and acknowledges these individuals for their important roles in Maryland State Police's history.

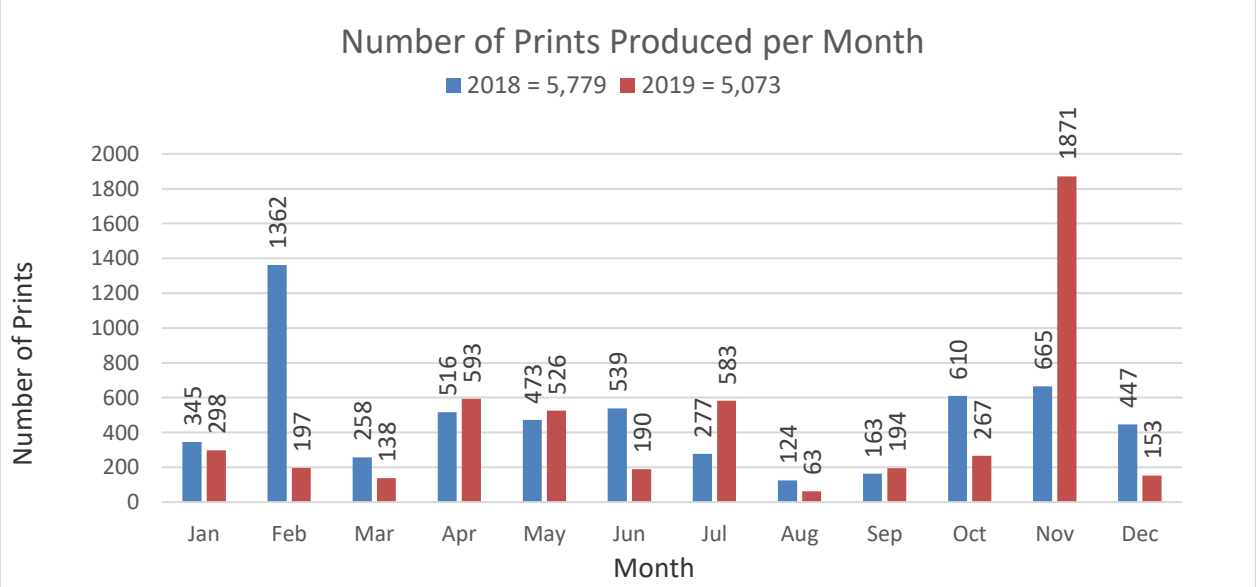
In 2020, the Photography Unit will pursue the possibility of adding VeriPic connectivity into the RMS system. The goal of this change is to make the system easier for personnel to use, have an integration with the RMS and to continue to safeguard The Department's images.

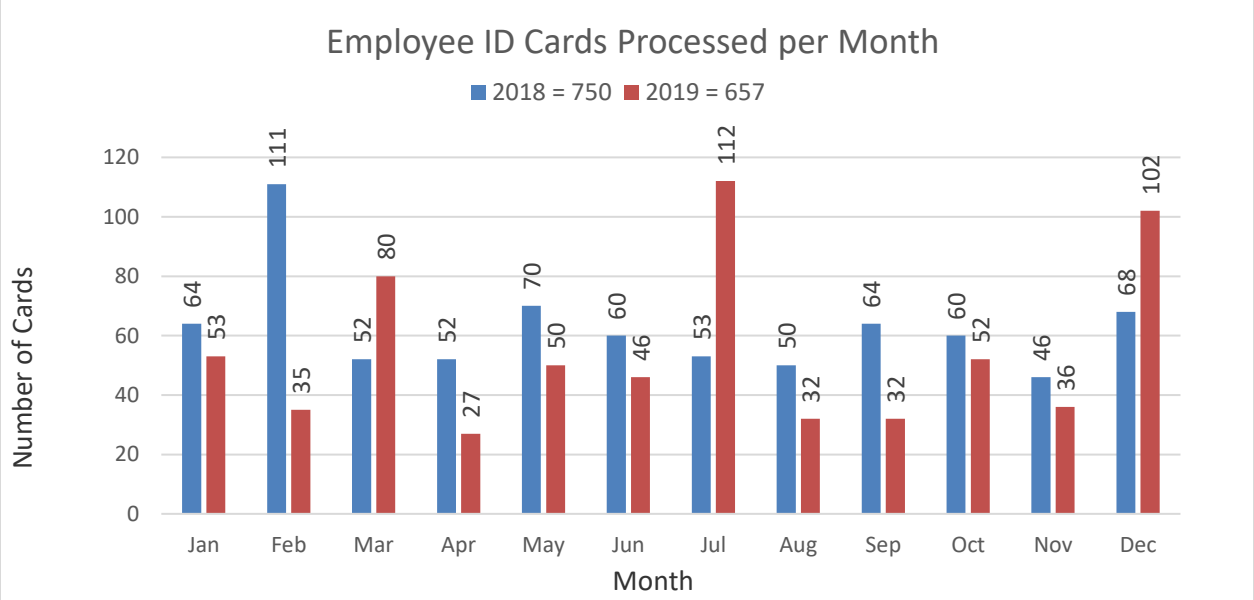
Photography Unit personnel serve as members of the Disaster Identification Team and provide technical training and equipment recommendations in photography.

Photography Requests	
MSP Requestors	**Requests**
Portraits *(by # of days, not requestors)*	126
Headquarters	11
SSB	26
CIB	12
FOB	20
Casework	16
TOTAL	**211**






Number of Prints Produced per Month
2018 = 5,779
2019 = 5,073
Number of Prints
Month
Jan 345 298
Feb 1362 197
Mar 258 138
Apr 516 593
May 473 526
Jun 539 190
Jul 277 583
Aug 124 63
Sep 163 194
Oct 610 267
Nov 665 1871
Dec 447 153


Employee ID Cards Processed per Month
2018 = 750
2019 = 657
Number of Cards
Month
Jan 64 53
Feb 111 35
Mar 52 80
Apr 52 27
May 70 50
Jun 60 46
Jul 53 112
Aug 50 32
Sep 64 32
Oct 60 52
Nov 46 36
Dec 68 102

CENTRAL RECEIVING UNIT

The Central Receiving Unit (CRU) functions as the liaison between the MSP-FSD and agencies that submit evidence for scientific analysis and CDS destruction. All three laboratory sites have a Central Receiving Unit that controls the security of evidence while awaiting analysis and again while pending return to the submitting agency. The unit reports directly to the MSP-FSD Assistant Commander.

During 2019, the Central Receiving Unit staff at all three locations attended a fourteen hour online evidence management course through the International Association for Property and Evidence, Inc. All staff successfully completed a certification examination to become Certified Property and Evidence Specialists by this organization.

Berlin Satellite Location

This location has an MSP Forensic Inventory Control Officer (MSP-FICO) who manages the CDS evidence submitted for analysis and conducts regularly scheduled inventories. The MSP-FICO assigns casework to the forensic scientists, manages rush requests and faxes laboratory reports to the local State's Attorney's Offices. The MSP-FICO also performs administrative tasks for the site such as logging subpoenas, completing requisitions, scheduling evidence transfer appointments, and distributing mail.

Hagerstown Satellite Location

The Hagerstown site has one MSP-FICO that manages CDS and Latent Print evidence submissions and conducts regularly scheduled inventories. In addition, the MSP-FICO manages rush requests, processes discovery requests and faxes laboratory reports to the local State's Attorney's Offices. The MSP-FICO also does administrative tasks for the laboratory, such as conducting the capital equipment inventory, maintaining the working fund and retaining analytical case files.

Pikesville Headquarters Location

This location has one Administrative Officer (CRU Supervisor) and three MSP-FICO's. The Pikesville location handles a large volume of various types of evidence such as swabs, sexual assault kits, soiled clothing, controlled dangerous substances, toxicology kits, guns, ammunition, fingerprint lift cards, fire debris, and questioned documents. The items stay secured in the unit while awaiting analysis and again while pending return to the submitting agency. Personnel assigned to the unit ensure the integrity and protection of each item of evidence while in their custody. Regularly scheduled inventories of the evidence within Central Receiving and the laboratory units are coordinated through the unit.

The Pikesville CRU administers and carries out the Department's CDS destruction process. During this process, MSP-FICO's randomly select a number of cases to be re-tested for quality control. The CRU also coordinates with various MSP Divisions for the local destruction of

marijuana plants and confiscated parcels. The CRU Supervisor is responsible for organizing disposal events for law enforcement agencies across the state.

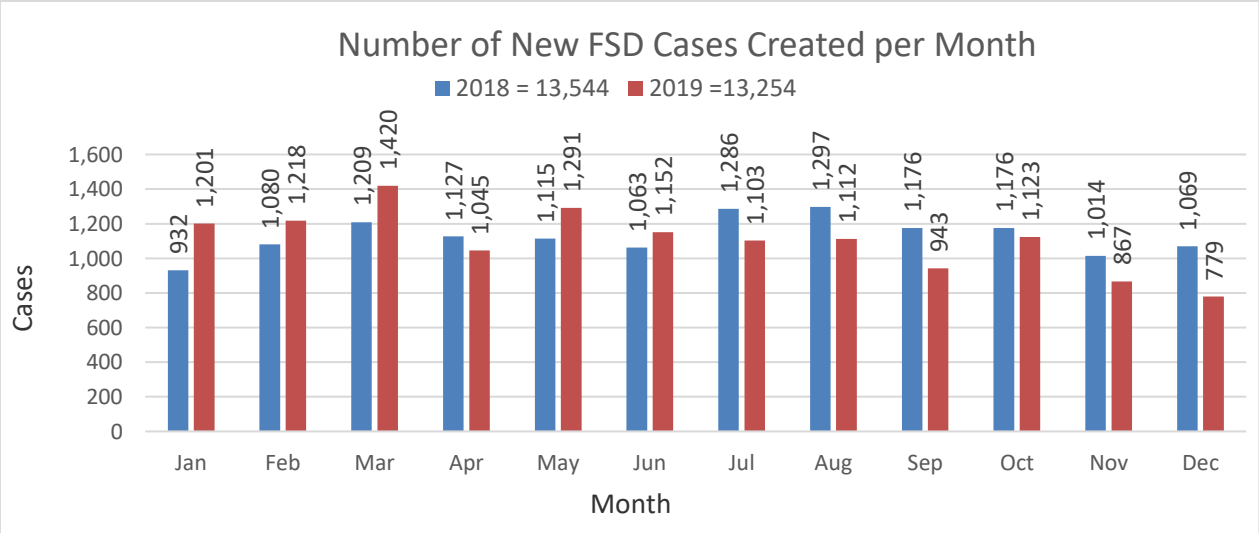
The CRU is also responsible for archiving scientific analytical reports for all sections of the MSP-FSD and coordinates the transmittal of files to and from the State Records Management Center. The CRU maintains expunged records for the Division.

Additionally, the CRU plays an essential role in the use of StarLIMS, the laboratory information management system utilized by MSP-FSD. The CRU supervisor functions as a StarLIMS Administrator and acts as the primary liaison between FSD end users and the project managers.

Testing of the new version of StarLIMS was ongoing throughout 2019. The StarLIMS Administrator and IT Quality Assurance Specialist worked with the Abbott Informatics Support Team identifying issues during the testing phase. By the end of 2019 the new version was still unable to be put into production.

In May of 2019, the Pikesville FICO's assisted in the Department's audit of unsubmitted Sexual Assault Forensic Evidence Kits conducted by the Office of the Attorney General. The CRU received nearly 90 kits within a three week time frame in preparation for the on-site audit.

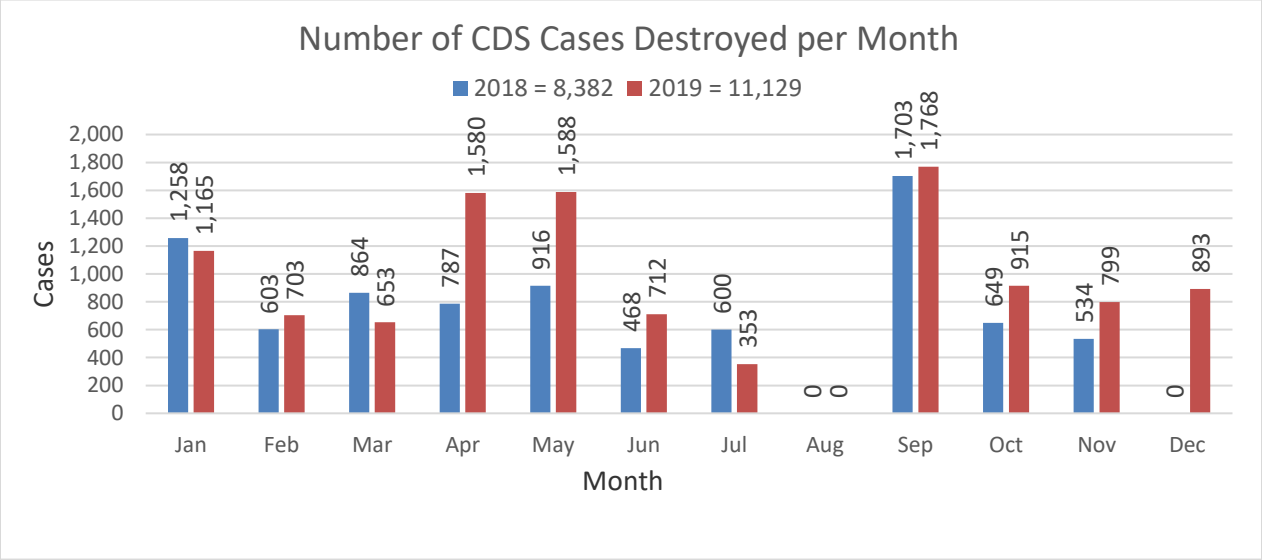
Two MSP-FICO positions are vacant at the Pikesville laboratory going into the first quarter of 2020. This is due to one employee acquiring another position within the laboratory and the other leaving the Maryland State Police.



Note: Cases are counted only once, regardless of the number of units to which they are routed.

Number of Containers Received by Lab			
	Berlin	**Hagerstown**	**Pikesville**
Jan	227	189	1,139
Feb	231	280	1,155
Mar	234	265	1,296
Apr	190	248	897
May	318	266	1,194
Jun	205	260	1,045
Jul	264	184	990
Aug	170	220	1,103
Sep	190	135	888
Oct	153	330	1,123
Nov	169	213	793
Dec	133	181	780
Total	**2,484**	**2,771**	**12,403**

Note: 'Containers' refers to individual evidence packages. A case can consist of one or more containers, depending on the amount or type of evidence.



ADMINISTRATIVE SUPPORT UNIT

The Administrative Support Unit provides support throughout the MSP-FSD. Office management functions include recruiting for civilian vacancies, processing working fund expenditures, ordering laboratory supplies, capital inventory, various administrative duties involving the laboratory budget, personnel inquiries, maintaining service agreement contracts, processing invoices, logging and maintaining all submitted court summonses, logging and processing training requests, and maintaining the Division's filing system. The Administrative Support Unit is essential in providing the MSP-FSD staff with what they need to do their jobs in the field and in the laboratory.

In addition to the MSP-FSD administrative staff, a contractual employee that is sub-contracted through LB & B Associates is assigned to provide security/receptionist coverage for the MSP-FSD front lobby security desk. This individual screens and logs all visitors, including personnel delivering evidence, and also monitors laboratory security cameras and communicates with the Headquarters Duty Officer and the Baltimore County Police Department regarding security issues. In addition, this contracted employee provides clerical assistance to various units when needed.

MSP-FSD receives additional support through functions provided by a Research Statistician and an IT Staff Specialist. The Research Statistician collects, analyzes, evaluates and disseminates MSP-FSD's DNA Statewide Database reports and other laboratory statistical information. The IT Staff Specialist functions as the liaison between MSP-FSD and MSP-ITD, and focuses on IT projects such as StarLIMS and MSP-FSD's DNA Sample Tracker.

PATTERN EVIDENCE SECTION

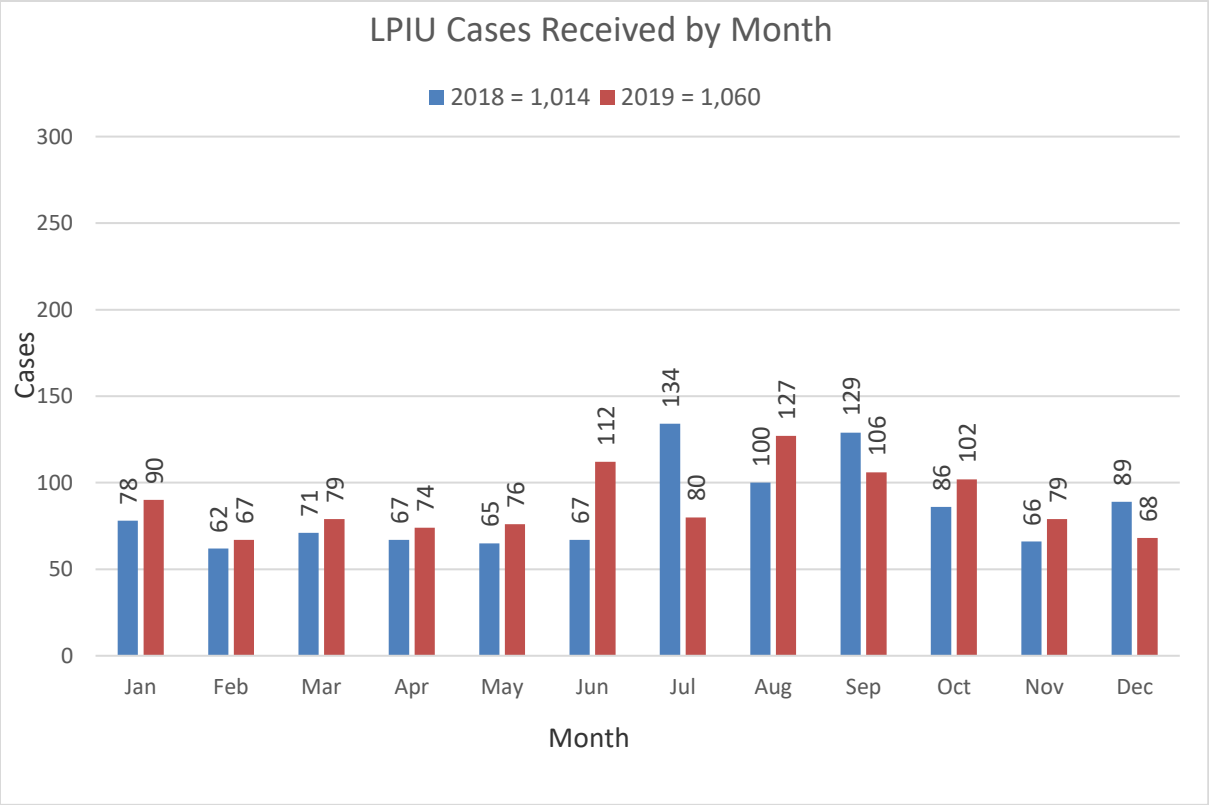
The Pattern Evidence Section is comprised of two units: the Latent Prints/Impressions Unit (LPIU) and the Firearms/Toolmarks Unit (FATMU). Both units operate out of the Pikesville laboratory and there is an additional LPIU in Hagerstown. The FATMU performs analysis on firearms and toolmarks using comparison microscopy and conducts serial number restoration. The LPIU performs analysis of latent friction ridge impression, footwear and tire track related evidence. One Forensic Scientist Manager oversees both units. The LPIU consists of two supervisors (Pikesville/Hagerstown), two Forensic Scientist Advanced positions, three Forensic Scientist III's (one part-time contractual, two full time) and two Forensic Scientist II's. The FATMU consists of one supervisor, two Forensic Scientist Advanced positions (one of these positions is vacant), one Forensic Scientist III, two Forensic Scientist II's, and two Laboratory Technicians, and one vacant Forensic Scientist I position. The Forensic Sciences Division is in the recruitment process for the vacant positions.

LATENT PRINTS/IMPRESSIONS UNIT

The LPIU performs examination of latent friction ridge impressions. Various methods involving chemicals, powders and illumination techniques are used for the visualization of latent prints. The unit records developed friction ridge impressions using digital capture processes as well as gel and adhesive lifts. Comparisons between latent prints and known prints are conducted to determine if they originated from the same individual. In cases where an identification is made, a second examiner completes an independent verification. Any unidentified latent prints meeting the system requirements are searched through the Maryland Automated Fingerprint Identification System (MAFIS) and, when warranted, through the FBI database (NGI). In 2019, the LPIU successfully reduced their case backlog by 85%.

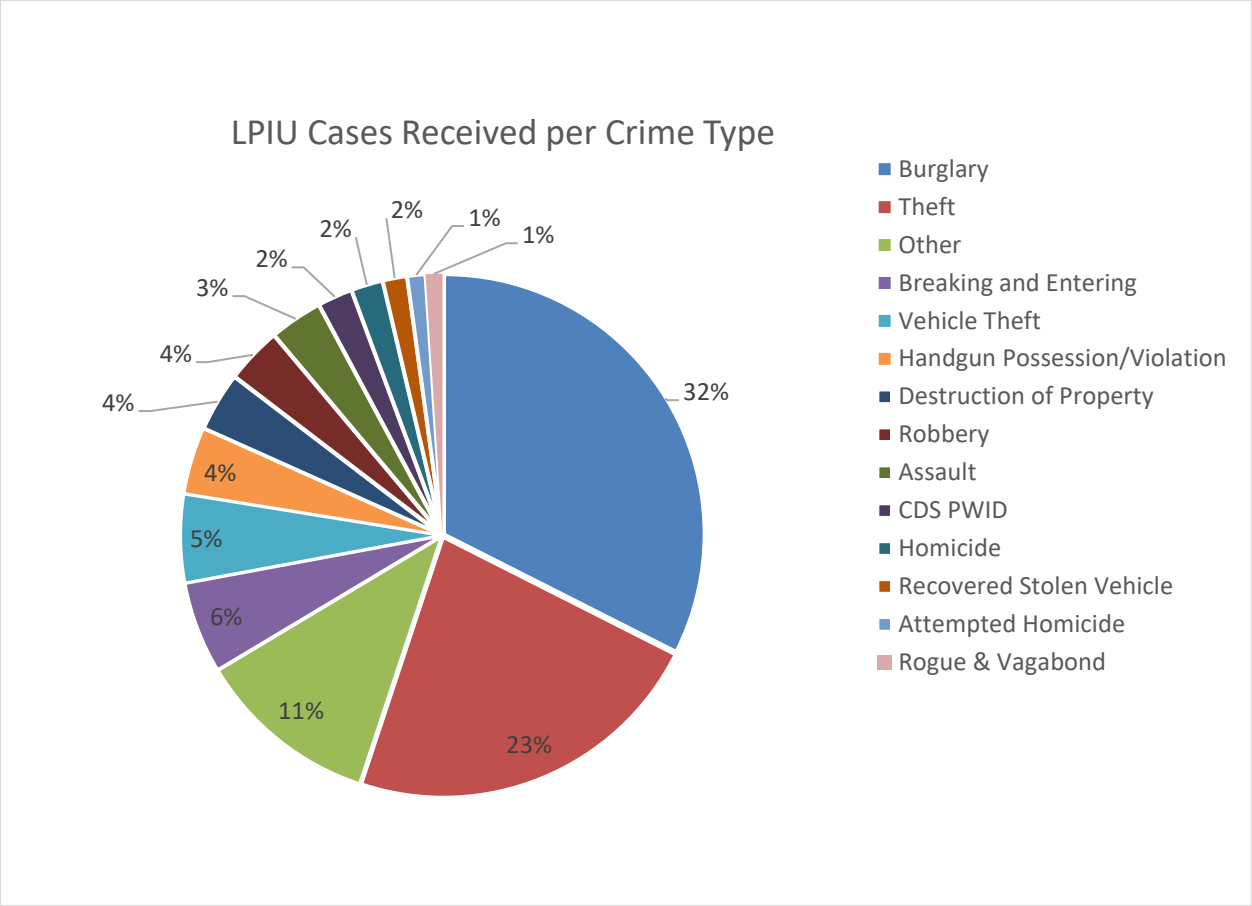
The LPIU is also responsible for the examination of footwear and tire track evidence. Various powders, chemicals and photography are used for the proper recovery of this impression evidence. Images are recorded with digital imaging devices. An analysis and comparison are performed as required for these sub-disciplines. Any footwear images that are suitable are entered and searched through the Shoe Print Image Capture and Retrieval database (SICAR) for brand recognition. Tire images can be searched through the Tread Design Guide for brand recognition. In cases where either an "identification" or "could have been made" conclusion is reached, a second examiner performs an independent verification.

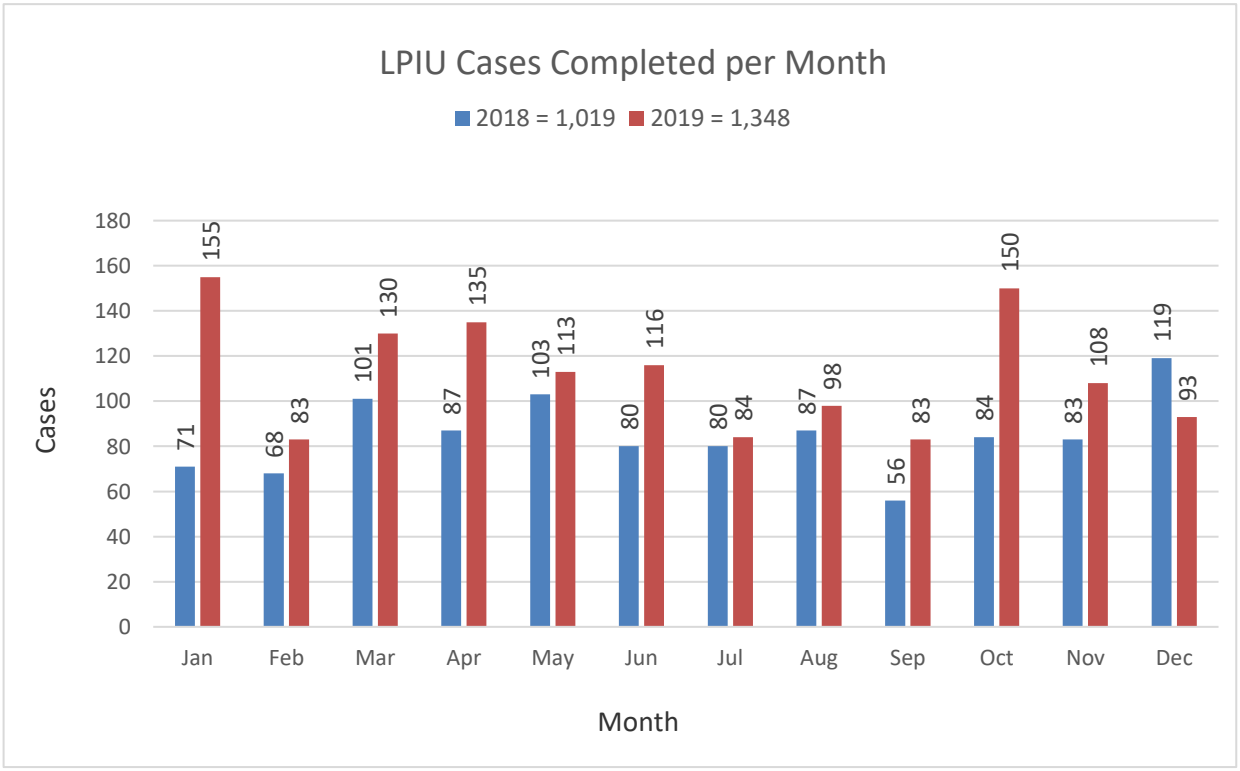
Latent Print/Impressions Casework Statistics

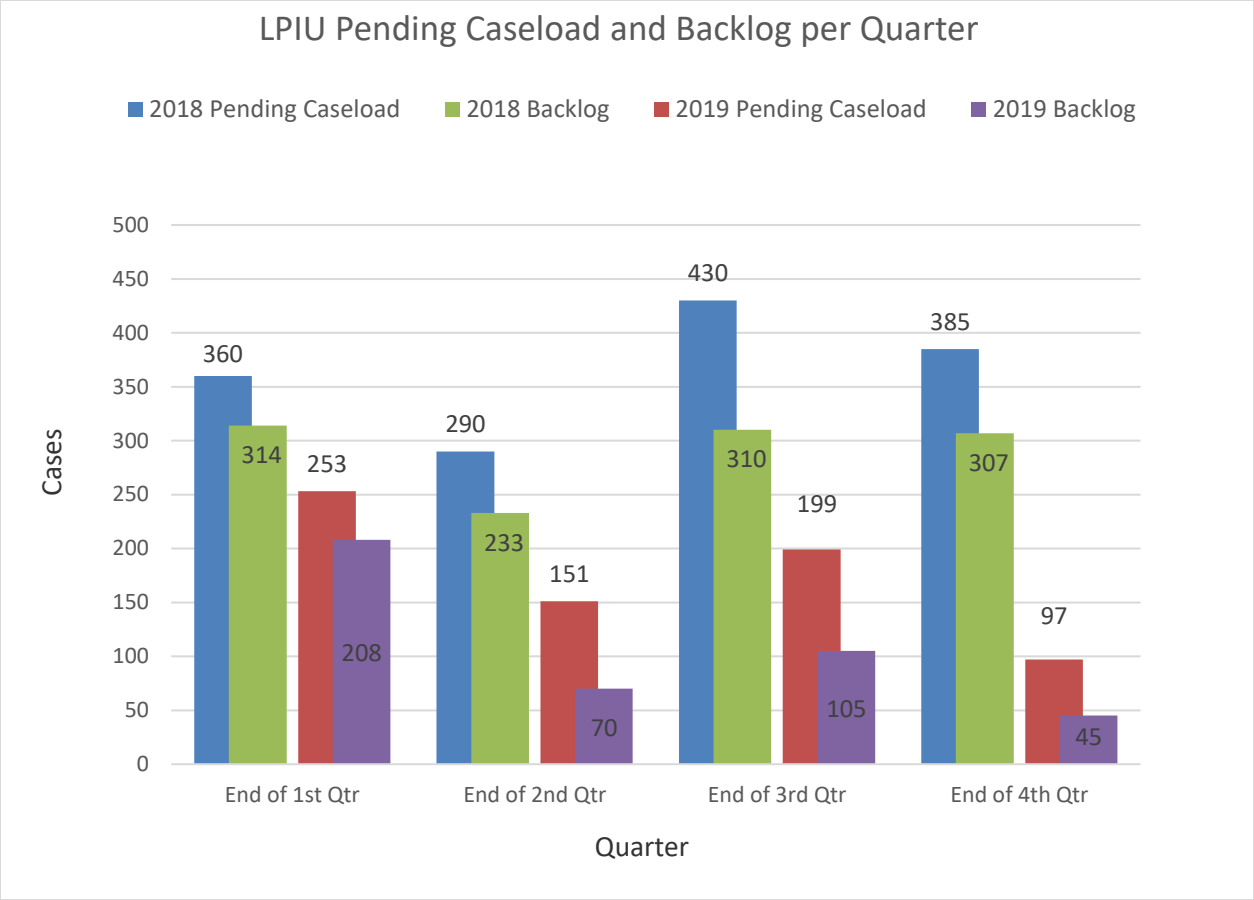


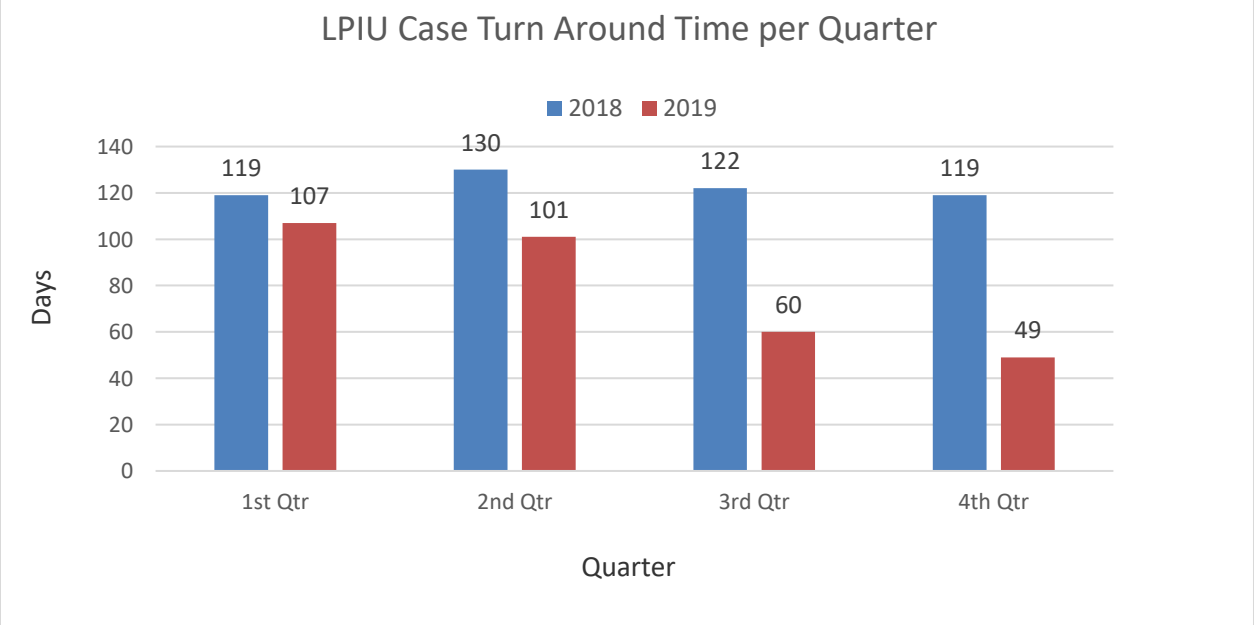
LPIU Cases Received per MSP Installation		
MSP Installation	**Counties Served**	**Submissions**
MSP-North East	Cecil	24
MSP-CID/CED	Statewide	23
MSP-Princess Anne	Somerset	17
MSP-Westminster	Carroll	13
MSP-Easton	Talbot, Caroline, Dorchester	13
MSP-Golden Ring	Baltimore	12
MSP-Salisbury	Wicomico	9
MSP-Hagerstown	Washington	9
MSP-Berlin	Worcester	8
MSP-Leonardtown	St. Mary's	8
MSP-Frederick	Frederick	8
MSP-Homicide	Statewide	6
MSP-DED/C3I	Statewide	5
MSP-Centerville	Kent, Queen Anne's	4
MSP-Bel Air	Harford	4
MSP-Cumberland	Allegany	4
MSP-Forestville	Prince George's	4
MSP-JFK Hwy	Cecil, Harford, Baltimore	3
MSP-College Park	Prince George's	3
MSP-Annapolis	Anne Arundel	3
MSP-Prince Frederick	Calvert	2
MSP-McHenry	Garrett	2
MSP-Rockville	Montgomery	2
MSP-Glen Burnie	Anne Arundel	2
OSFM	Statewide	2
MSP-La Plata	Charles	1
	TOTAL	**191**

Allied Agency Cases Received by LPIU per County	
County	**Submissions**
St. Mary's	190
Dorchester	105
Frederick	94
Worcester	88
Wicomico	84
Carroll	54
Prince Georges	45
Talbot	33
Calvert	27
Queen Anne's	25
Washington	22
Anne Arundel	20
Baltimore City	18
Cecil	18
Allegany	10
Caroline	8
Garrett	7
Baltimore	5
Harford	4
Kent	4
Somerset	4
Out of State	2
Charles	1
Howard	1
TOTAL	**869**

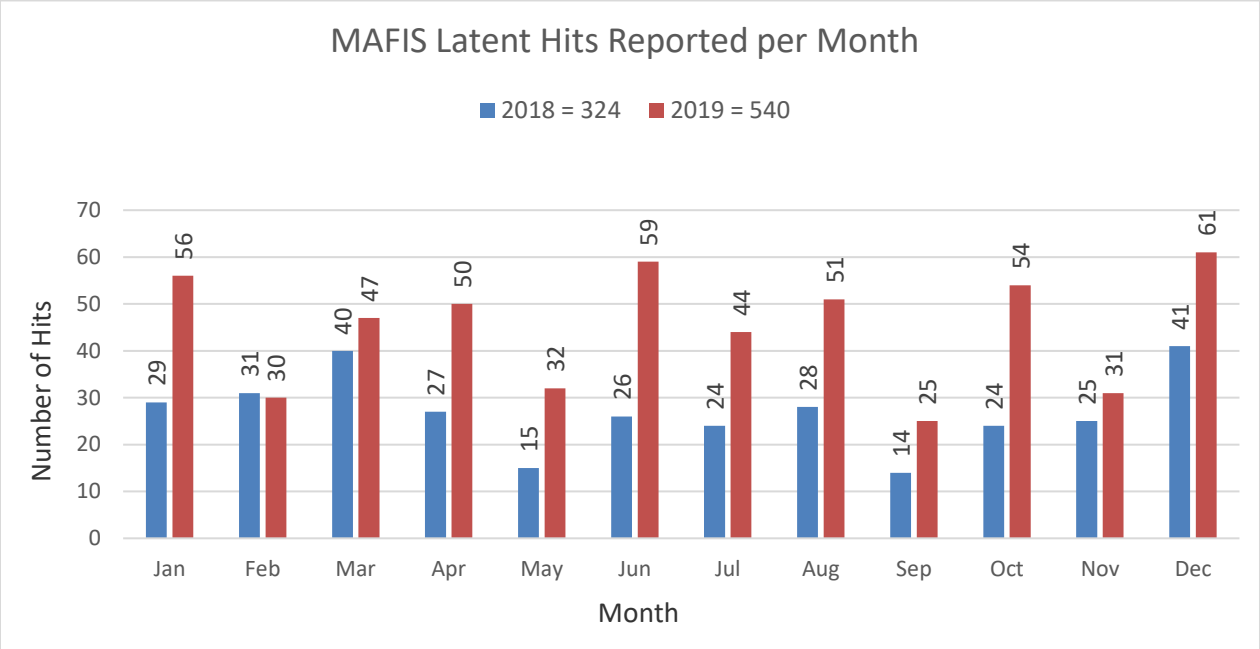

LPIU Cases Received per Crime Type
32%
23%
11%
6%
5%
4%
4%
4%
3%
2%
2%
2%
1%
1%
Burglary
Theft
Other
Breaking and Entering
Vehicle Theft
Handgun Possession/Violation
Destruction of Property
Robbery
Assault
CDS PWID
Homicide
Recovered Stolen Vehicle
Attempted Homicide
Rogue & Vagabond

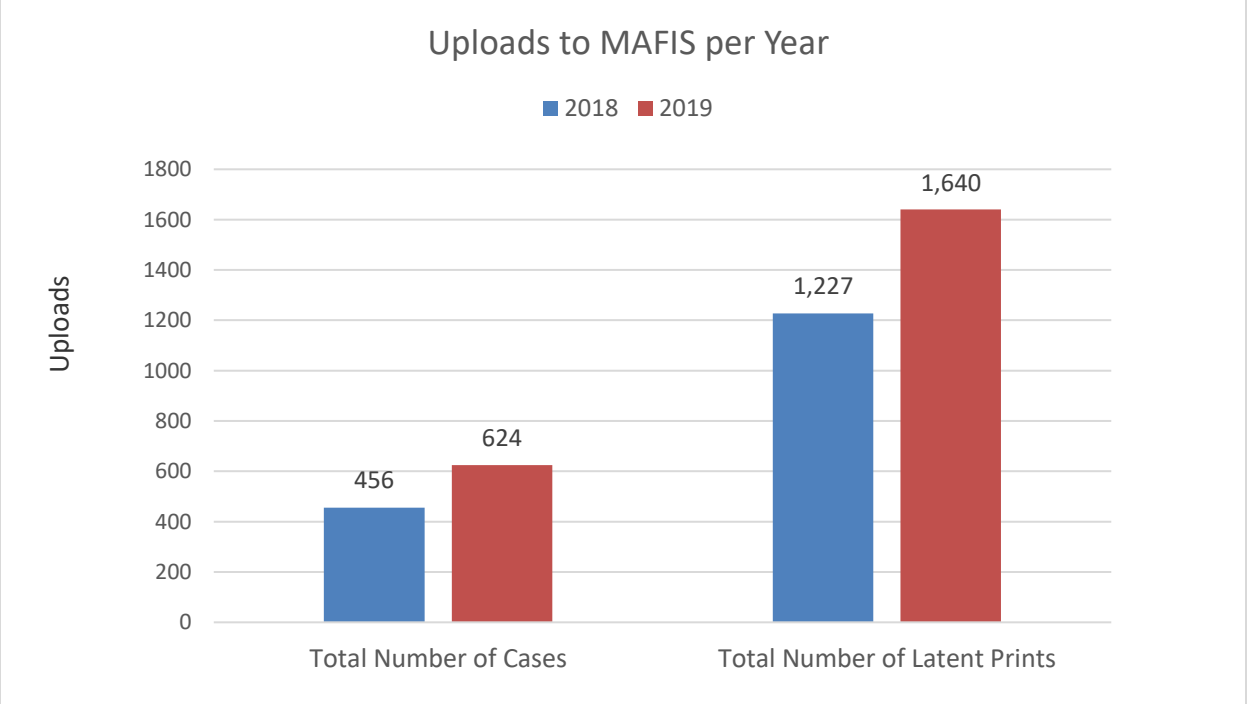

LPIU Cases Completed per Month
2018 = 1,019
2019 = 1,348
Cases
Month
Jan 71 155
Feb 68 83
Mar 101 130
Apr 87 135
May 103 113
Jun 80 116
Jul 80 84
Aug 87 98
Sep 56 83
Oct 84 150
Nov 83 108
Dec 119 93
0
20
40
60
80
100
120
140
160
180


LPIU Pending Caseload and Backlog per Quarter
2018 Pending Caseload
2018 Backlog
2019 Pending Caseload
2019 Backlog
Cases
500
450
400
350
300
250
200
150
100
50
0
360
314
253
208
290
233
151
70
430
310
199
105
385
307
97
45
End of 1st Qtr
End of 2nd Qtr
End of 3rd Qtr
End of 4th Qtr
Quarter


LPIU Case Turn Around Time per Quarter
2018
2019
Days
140
120
100
80
60
40
20
0
119
107
130
101
122
60
119
49
1st Qtr
2nd Qtr
3rd Qtr
4th Qtr
Quarter

Latent Print/Impressions Database Statistics





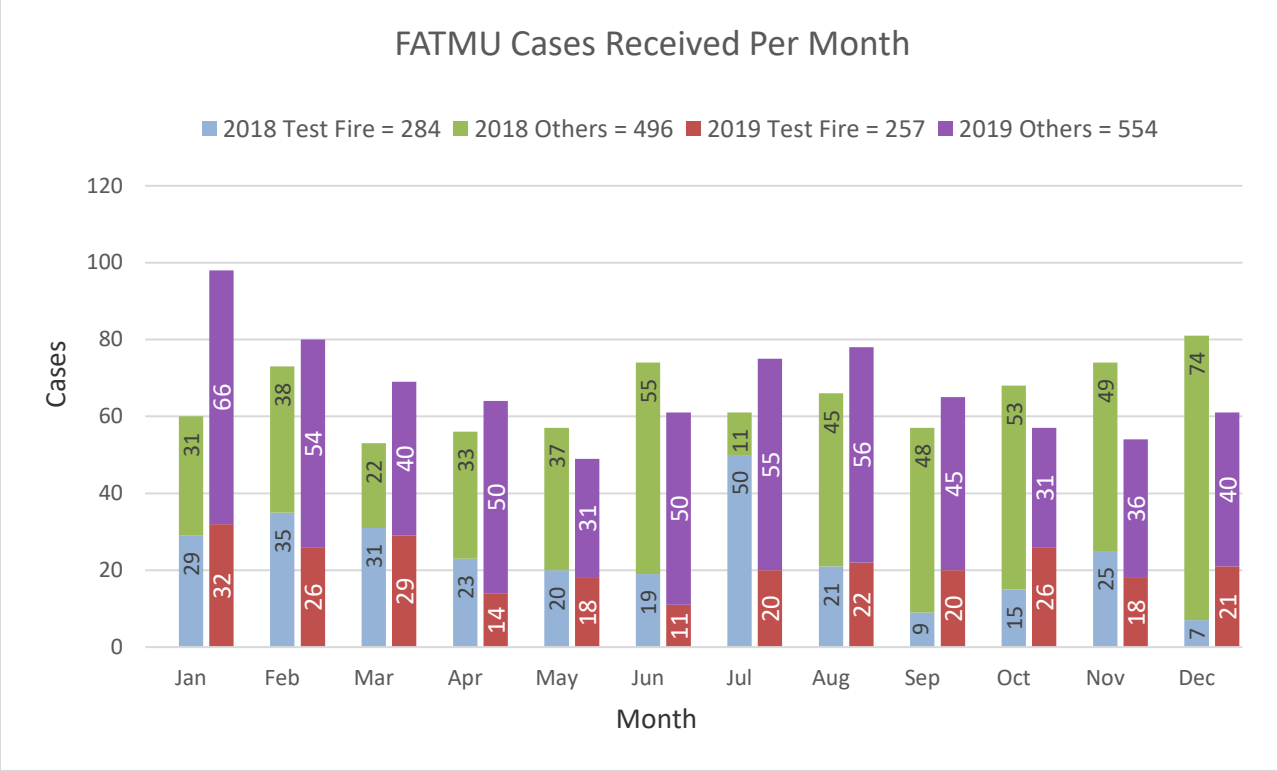
FIREARMS/TOOLMARKS UNIT

The Firearms/Toolmarks Unit (FATMU) provides microscopic and functional examination of firearms and firearm-related evidence. Examiners in this unit also perform serial number restoration and toolmark examinations. In addition, FATMU is responsible for test firing firearms for possible entry into the National Integrated Ballistic Information Network (NIBIN) BrassTrax system. Fired cartridge case data (digital images) are entered into the system to search against previously entered fired evidence cartridge cases from various scenes and against cartridge cases from test fired weapons.

The unit has two programs assisting with turnaround time for both firearms operability testing and NIBIN entries. These programs are the Walk-In Test Fire (WITF) and Operation Test Shot (OTS). The WITF program involves allied law enforcement agencies bringing firearms directly to the FATMU for functionality examinations. This program allows the agency representative to observe the test fire, and then serve as a witness in court in lieu of requiring the examiner to appear. OTS involves supplying law enforcement agencies with Forensic Buddy Systems (portable firearm canisters). The Forensic Buddy System enables the agencies to test fire handguns at their location and submit fired bullets/cartridge cases in pristine condition to the FATMU. These programs have been effective and instrumental in the unit's success with obtaining NIBIN Hits. In 2019, FATMU provided additional training to several allied agencies for NIBIN acquisition to support the NIBIN entry program.

The FATMU also provides a service to the Maryland Handgun Roster Board (HRB). The HRB is responsible for evaluating new firearms for compliance with Maryland regulations and determining if they should be approved for sale in the state. FATMU performs a non-forensic examination of the petitioned firearms specifically for the qualifying criteria established in COMAR.

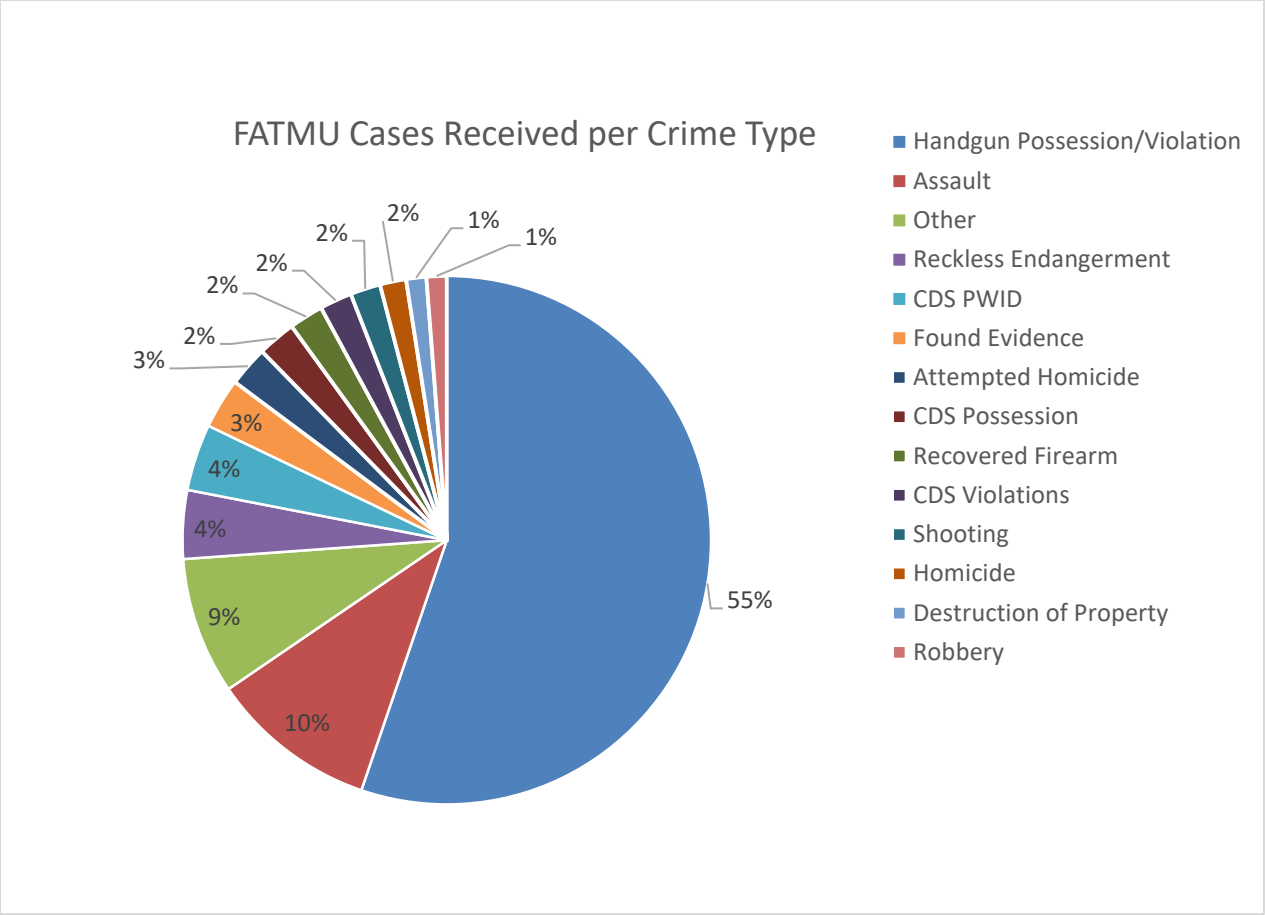
Firearms/Toolmarks Casework Statistics

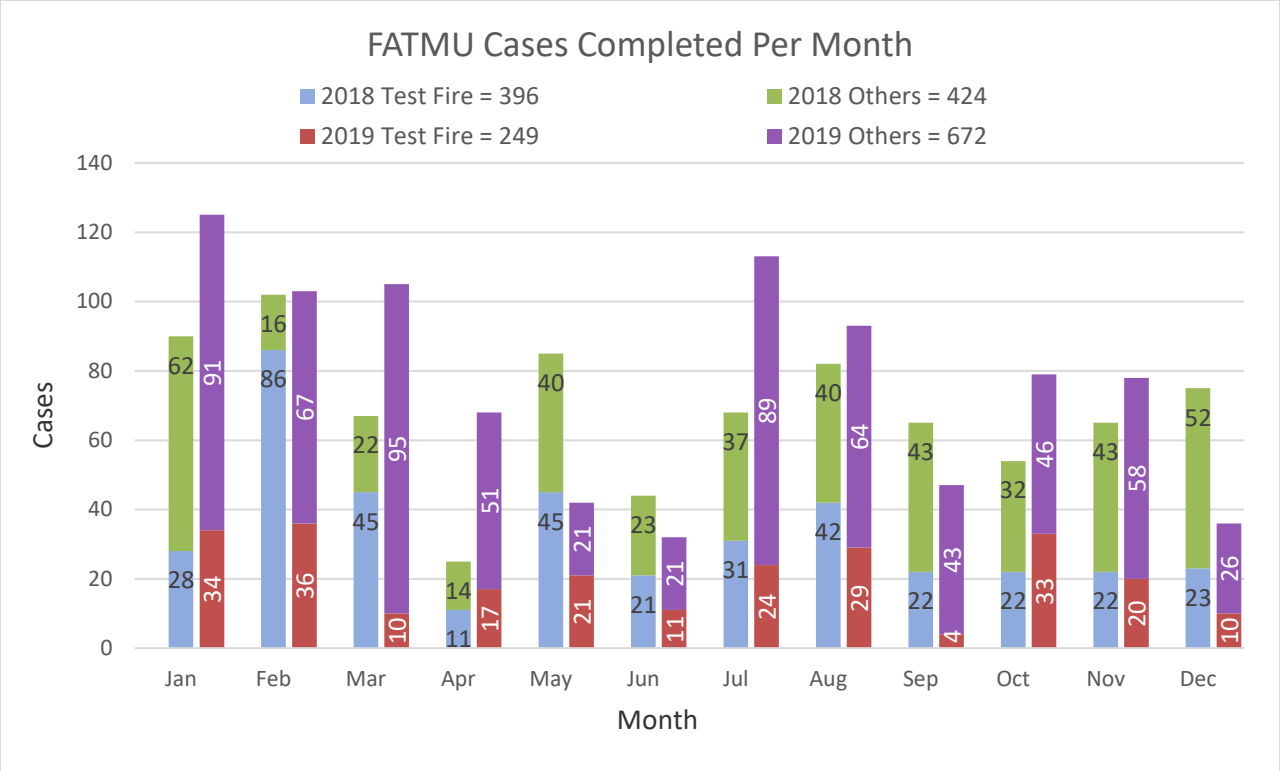


Note: Test fire = operability with and without serial number restoration. Others = all other types including OTS and microscopic comparisons.

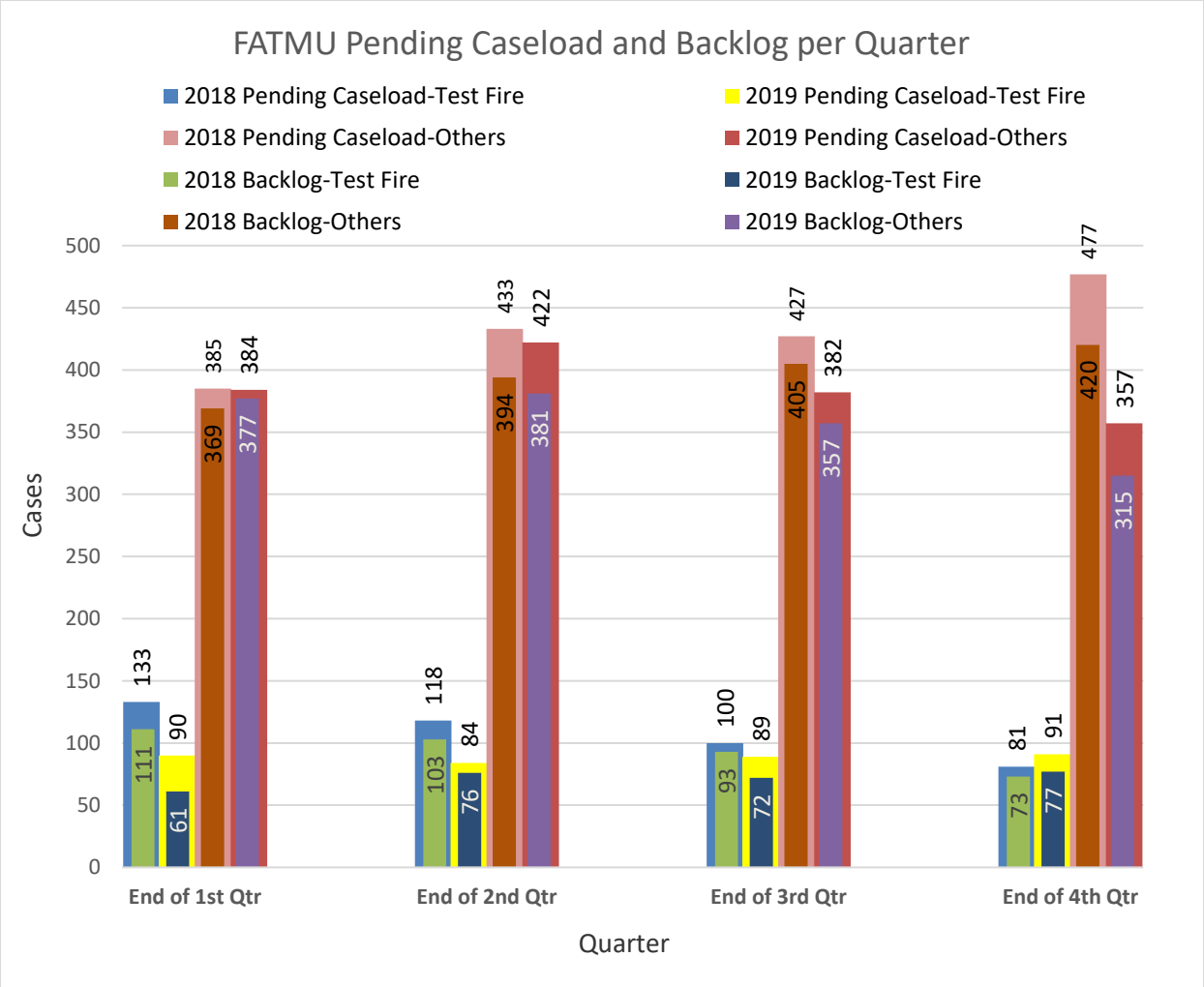
FATMU Cases Received per MSP Installation				
Installation	**Counties Served**	**Test Fire**	**Others**	**Total**
MSP-CID/CED	Statewide	22	67	89
MSP-College Park	Prince George's	5	19	24
MSP-Hagerstown	Washington	5	10	15
MSP-Frederick	Frederick	7	7	14
MSP-Rockville	Montgomery	2	12	14
MSP-Cumberland	Allegany	4	9	13
MSP-Golden Ring	Baltimore	9	2	11
MSP-North East	Cecil	7	3	10
MSP-Forestville	Prince George's	0	8	8
MSP-Easton	Caroline, Dorchester, Talbot	7	1	8
MSP-Leonardtown	St. Mary's	1	5	6
MSP-JFK Hwy	Cecil, Harford, Baltimore	6	0	6
MSP-Glen Burnie	Anne Arundel	1	5	6
MSP-Waterloo	Howard	6	0	6
MSP-Salisbury	Wicomico	1	5	6
MSP-Westminster	Carroll	5	0	5
MSP-Homicide	Statewide	1	4	5
MSP-Princess Anne	Somerset	2	3	5
MSP-Annapolis	Anne Arundel	5	0	5
MSP-Centerville	Kent, Queen Anne's	5	0	5
MSP-Prince Frederick	Calvert	0	5	5
MSP-McHenry	Garrett	4	0	4
MSP-La Plata	Charles	1	2	3
MSP-Berlin	Worcester	0	2	2
MSP-Bel Air	Harford	2	0	2
	TOTAL	**108**	**169**	**277**

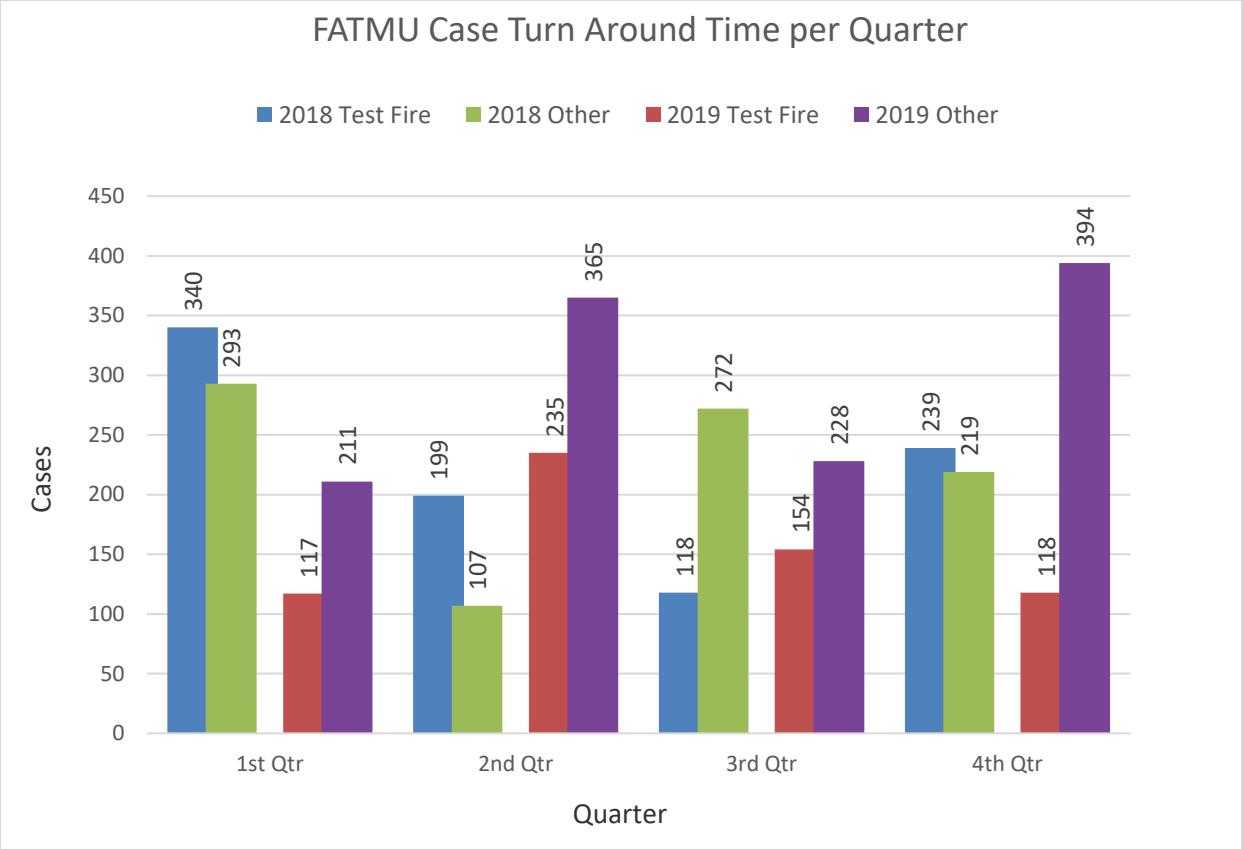
Allied Agency Cases Received by FATMU per County			
County	**Test Fire**	**Others**	**Total**
Washington	20	68	88
Charles	21	54	75
Baltimore City	35	23	58
Howard	5	45	50
Cecil	22	16	38
Wicomico	6	31	37
Harford	2	34	36
Worcester	3	31	34
Anne Arundel	7	18	25
Frederick	9	12	21
St. Mary's	3	17	20
Carroll	8	6	14
Calvert	1	12	13
Kent	3	5	8
Baltimore	2	3	5
Dorchester	0	4	4
Prince George's	0	2	2
Queen Anne's	1	1	2
Caroline	1	1	2
Talbot	0	1	1
Garrett	0	1	1
Somerset	0	0	0
TOTAL	**149**	**385**	**534**


FATMU Cases Received per Crime Type
55%
10%
9%
4%
4%
3%
3%
2%
2%
2%
2%
1%
1%
Handgun Possession/Violation
Assault
Other
Reckless Endangerment
CDS PWID
Found Evidence
Attempted Homicide
CDS Possession
Recovered Firearm
CDS Violations
Shooting
Homicide
Destruction of Property
Robbery

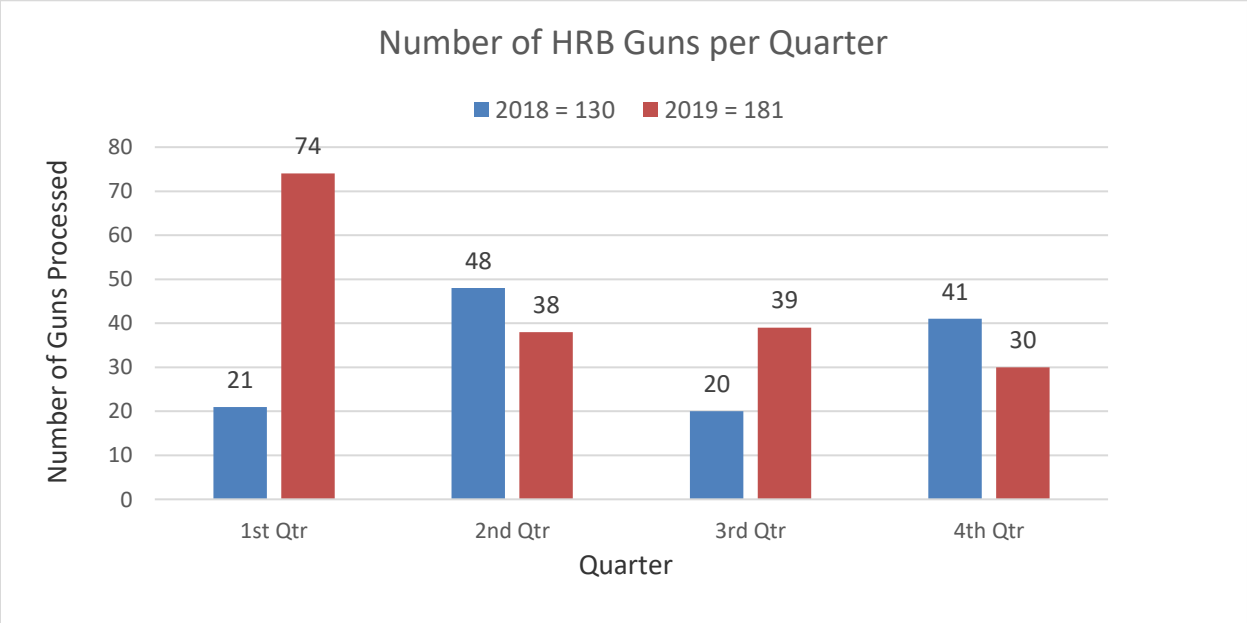


Note: Test fire = operability with and without serial number restoration. Others = all other types including OTS and microscopic comparisons.

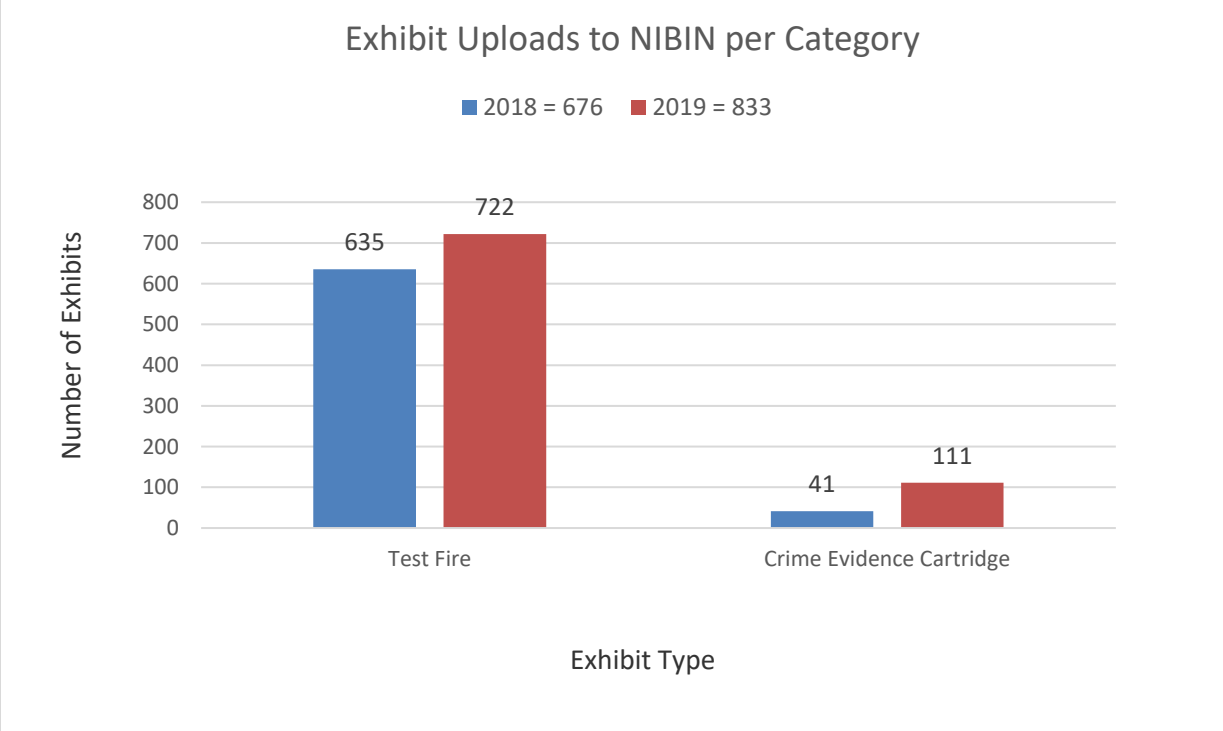

FATMU Pending Caseload and Backlog per Quarter
2018 Pending Caseload-Test Fire
2019 Pending Caseload-Test Fire
2018 Pending Caseload-Others
2019 Pending Caseload-Others
2018 Backlog-Test Fire
2019 Backlog-Test Fire
2018 Backlog-Others
2019 Backlog-Others
Cases
500
450
400
350
300
250
200
150
100
50
0
133
111
90
61
385
369
384
377
118
103
84
76
433
394
422
381
100
93
89
72
427
405
382
357
81
73
91
77
477
420
357
315
End of 1st Qtr
End of 2nd Qtr
End of 3rd Qtr
End of 4th Qtr
Quarter

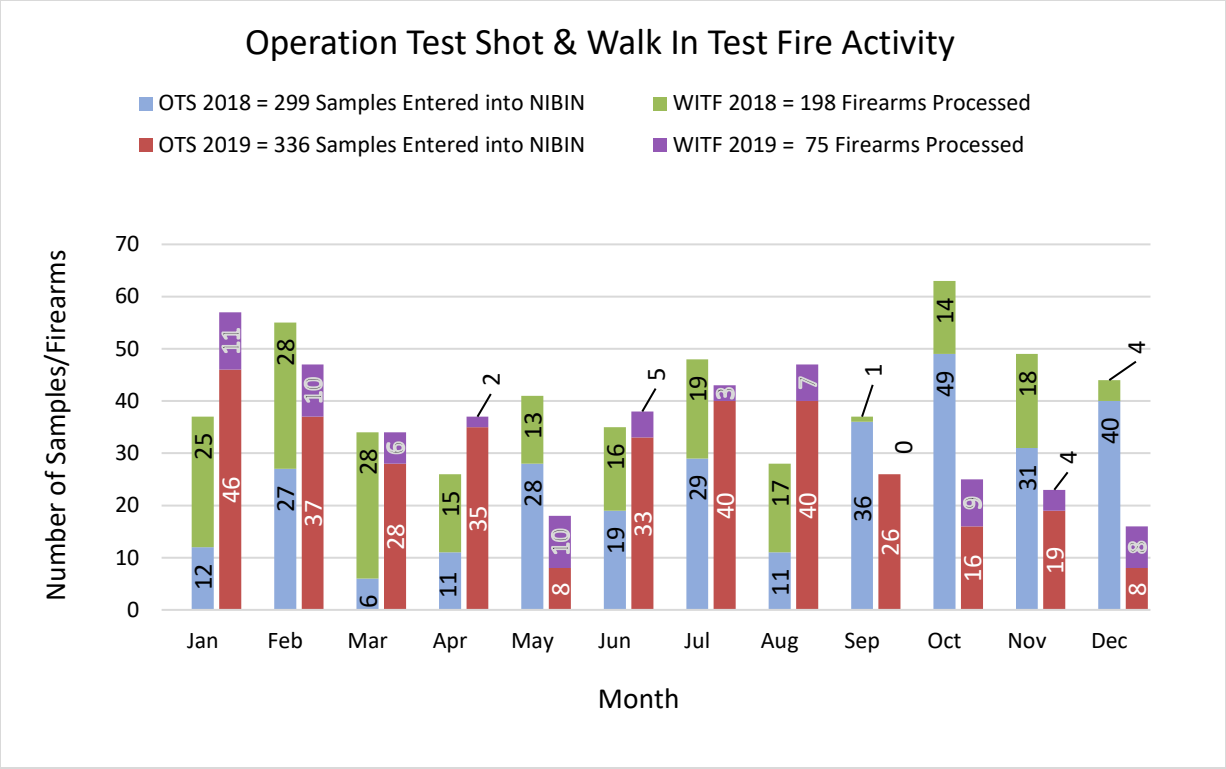


Note: Test fire = operability with and without serial number restoration. Others = all other types including OTS and microscopic comparisons.



Firearms/Toolmarks Database Statistics




Operation Test Shot & Walk In Test Fire Activity
OTS 2018 = 299 Samples Entered into NIBIN
WITF 2018 = 198 Firearms Processed
OTS 2019 = 336 Samples Entered into NIBIN
WITF 2019 = 75 Firearms Processed
Number of Samples/Firearms
Month
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

NIBIN Associations			
Associated Agencies		**Number of Leads**	**Number of Confirmed Hits**
Calvert Co SO	DC Metro PD	2	0
Carroll Co SO	Carroll Co SO	1	1
Charles Co SO (entered by MSP personnel)	DC Metro PD	1	0
Charles Co SO (entered by MSP personnel)	Charles Co SO	3	0
Charles Co SO (entered by MSP personnel)	VA - Newport News PD	1	0
Charles Co SO (entered by CCSO personnel on MSP terminal)	Charles Co SO	3	0
Charles Co SO (entered by CCSO personnel on MSP terminal)	DC Metro PD	4	0
Charles Co SO (entered by CCSO personnel on MSP terminal)	VA - Newport News PD	1	0
Charles Co SO (entered by CCSO personnel on MSP terminal)	Prince George's Co PD	2	0
Charles Co SO (entered by CCSO personnel on MSP terminal)	Maryland State Police (Charles Co SO)	1	0
Elkton PD	Wilmington City PD	2	0
Hagerstown PD	Montgomery County PD	1	0
Hagerstown PD	Hagerstown PD	1	0
Harford Co SO	Prince George's Co PD	1	0
Harford Co SO	Harford Co SO	1	1
Howard Co PD	Anne Arundel Co PD	2	0
Howard Co PD	DC Metro PD	2	0
Howard Co PD	Montgomery County PD	1	0
Howard Co PD	Baltimore County PD	1	0
Howard Co PD	Baltimore PD	2	0
Howard Co PD	Prince George's Co PD	2	0
Laurel PD	VA - Virginia Beach PD	2	0
Marlow Heights PD	DC Metro PD	1	0
Maryland Transportation Authority PD	NY - Nassau County PD	1	0
Maryland Transportation Authority PD	Baltimore PD	25	0

Maryland Transportation Authority PD	Baltimore County PD	2	0
MSP CED (90-40)	Baltimore County PD	1	0
MSP Annapolis	Annapolis PD	1	0
MSP Annapolis	DC Metro PD	1	0
MSP CID/Westminster	Frederick PD	2	0
MSP College Park	DC Metro PD	2	0
MSP Forestville	DC Metro PD	1	0
Maryland Transit Administration PD	Baltimore PD	4	0
Ocean City PD	Baltimore PD	1	0
Salisbury PD	Salisbury PD	1	0
Taneytown PD	Baltimore PD	1	0
	Total	**81**	**2**

Note: NIBIN leads are developed through a correlation review of NIBIN data. Confirmed hits have been verified microscopically by an examiner.

NOTEWORTHY CASES

In June 2019, a Georgia man was sentenced to 20 years in prison based on gun and drug charges stemming from a traffic stop in Queen Anne's County in 2018. MSP-FSD scientists worked on both drug and gun evidence in this case from 2018 through 2019. The gun was sent to MSP-FSD's Firearms/Toolmarks Unit where it was test fired and found to be operable.

In July 2019, FSD was notified by the NY State Criminal Justice Services of latent print identifications to two individuals related to latent prints recovered from a vehicle from a 1971 homicide in Anne Arundel County. The identification to one individual had already been made by the FBI in 2017 that linked this individual to a beer can near the scene. In order to complete the comparison to the other individual, a MSP-FSD Latent Print Examiner pulled one of the second individual's multiple Maryland known fingerprint cards, including prints collected back in 1980. This recent FSD comparison identified a latent print recovered from the vehicle, where the 1971 homicide victim was found. This case is currently listed on the CED Cold Case List and MSP-FSD is hoping that this recent identification leads to a break in the case.

At the beginning of December 2019, there were two separate NIBIN Leads produced from a 2017 MSP-CID Westminster shooting case. This 2017 case was suspended at the time because no suspects were developed in this case. The NIBIN Leads identified two possible firearms used in this shooting: a .40 S&W and a 9 mm Luger. One of the NIBIN Leads connected the .40 S&W to a 2018 Frederick County PD firearms possession case and the other NIBIN Lead connected the 9 mm Luger to a 2017 Frederick County PD property damage case. Investigators from Frederick County PD were contacted and informed MSP that two suspects were arrested previously for the 2018 possession case, and a Springfield Armory XDM .40 caliber pistol was seized by Frederick County PD at that time. The firearms evidence submitted from the 2017 MSP shooting case was examined by the MSP-FSD Firearms/Toolmarks Unit in December 2019 and results from this examination were provided to both MSP and Frederick County PD investigators.

CHEMISTRY SECTION

The Chemistry Section is responsible for performing Controlled Dangerous Substances (CDS) analysis on submitted evidence and Toxicology analysis of blood for alcohol and drugs. The Chemistry Section consists of the following four units: CDS-Pikesville, CDS-Berlin, CDS-Hagerstown and Toxicology. The CDS Units focus on identifying submitted evidence as being a specific type of drug while the Toxicology Unit focuses on identifying alcohol and drugs in blood taken from individuals suspected of driving while intoxicated/impaired. The Chemistry Section Manager oversees the work of all four units.

The CDS-Pikesville Unit consists of one Forensic Scientist Supervisor, two Forensic Scientist III's and two Forensic Scientist II's. In addition, three Allied Forensic Scientists work in the CDS-Pikesville laboratory. One Allied Forensic Scientist is employed by the Howard County Police Department, one is employed by the Cecil County State's Attorney's Office, and the third is employed by both the St. Mary's and Calvert County State's Attorney's Offices.

The CDS-Berlin Unit consists of one Forensic Scientist Supervisor and two Forensic Scientist III's. A vacant Forensic Scientist I position is in the process of being filled. The CDS-Berlin Unit operates out of the Berlin Regional Laboratory located at the MSP-Berlin Barrack.

The CDS-Hagerstown Unit consists of one Forensic Scientist Supervisor, one Forensic Scientist II, and one Forensic Scientist I. In addition, one Allied Forensic Scientist is employed by the Frederick County State's Attorney's Office. The CDS-Hagerstown Unit operates out of the Hagerstown Regional Laboratory located at the MSP-Hagerstown Barrack.

The Toxicology Unit consists of one Forensic Scientist Supervisor, one Forensic Scientist Advanced, one Forensic Scientist I and one Laboratory Technician I. A second Forensic Scientist I position is vacant. The Toxicology Unit operates out of the main laboratory in Pikesville.

CDS UNITS

In order to confirm the presence of Controlled Dangerous Substances (CDS) in a sample, several different types of analyses are performed in the CDS Units, including microscopy, color tests, microcrystalline tests, gas chromatography, gas chromatography/mass spectrometry and Fourier Transform infrared spectroscopy. The Pikesville and Hagerstown CDS Units are in the process of validating a new instrument called Direct Analysis in Real Time-Time of Flight Mass Spectrometer (DART-TOF MS), which will be used to more accurately and efficiently screen samples for CDS. Another important component of CDS analysis is obtaining accurate net and gross weights of the suspected CDS material through the use of analytical balances, bench top balances, and bulk scales. The units are in the process of validating a process to weigh samples in a particle hood to minimize exposure to the controlled substances.

The CDS Units submit monthly reports to the National Forensic Laboratory Information System (NFLIS) who documents the type and number of drugs detected in casework. These reports provide the DEA with current and accurate trends that can be used by law enforcement and policy makers to address the nation's drug problem. The units are working with High Intensity Drug Trafficking Areas (HIDTA) to collect and provide data in a usable format to inform law enforcement and public health officials on the emerging drug trends.

From January 1, 2019 to December 31, 2019, The CDS Units reported to Washington/Baltimore HIDTA on completed results of 18,903 tested lab samples. According to the data that HIDTA analyzed, cocaine and opioids categories account for the highest number of positive samples analyzed by the CDS Units. HIDTA reported that 0.2% of all cocaine positive samples were mixed with fentanyl, including 35 cocaine samples mixed with both fentanyl and heroin. HIDTA also reported that 44.8% of all heroin positive samples in 2019 were mixed with fentanyl. The fentanyl analogues identified in 2019 were para-fluoroisobutyryl fentanyl, furanyl fentanyl, acetyl fentanyl, cyclopropyl fentanyl, and valeryl fentanyl.

The CDS Units participated in a Drug Background Levels research project with the National Institute of Standards and Technology (NIST) and presented their findings at the annual meeting for the American Academy of Forensic Scientists. This research attempted to better understand the chemical background in forensics labs and helped define the efficiency of cleaning procedures and the integrity of collected data. The results of this research "Quantifying the effectiveness of cleaning agents at removing drugs from laboratory benches and floor tiles" were published in Forensic Chemistry in March 2019. This research also led to the units participating in a Health Hazards Evaluation by the National Institute of Occupational Safety and Health (NIOSH) to evaluate our current practices and create safer practices for handling controlled substances.

Also, in collaboration with scientists from the NIST and the Vermont Forensic Laboratory, the MSP-FSD Chemistry Manager had a scientific paper entitled "What's in the Bag? Analysis of exterior drug packaging by TD-DART-MS to predict the contents" published in Forensic Science International. The study focused on new drug testing methods that can reduce the risk of accidental exposure for police, first responders and forensic chemists. The authors found that testing swipes of the outside of CDS packages correctly predicted the contents 92% of the time.

This swiping technique could provide investigators more timely information regarding substances when investigating drug crimes, it can help increase safety measures for investigators and scientists, and this method can help to optimize workflow within forensic chemistry laboratories.

The MSP-FSD has noted a significant increase in fentanyl submissions, as well as analogs of fentanyl. In fact, opiate pharmaceuticals are now encountered more often than heroin in casework. Fentanyl analogs are drugs that are similar in structure to fentanyl with similar effects in the body, but are new and novel drugs. It is a challenge for the lab to identify these new fentanyl analogs as they emerge in casework. The units are participating in a joint project with the NIST to evaluate the DART-TOF MS for screening of drug evidence, as well as design targeted methods to improve the ability of the labs to confirm the presence of these dangerous fentanyls in casework.

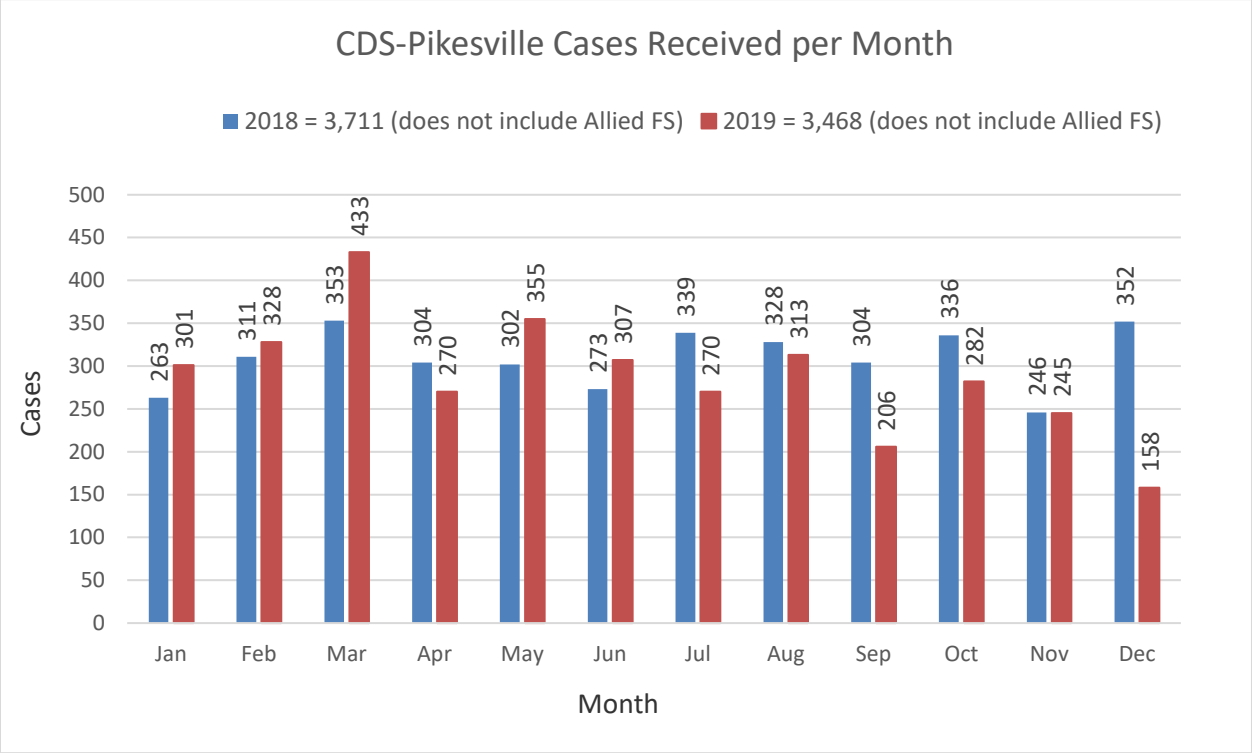
On June 1, 2019, Maryland made changes to the laws that now require a quantitative analysis. The definition of Marihuana under Maryland's Criminal Law has been amended to exclude "hemp", as defined in the Maryland Agriculture Article. The Maryland Agriculture Article now defines hemp based upon the concentration of Delta-9-Tetrahydrocannabinol (THC) within the material. Thus, additional quantitative testing is now required for crime laboratories in Maryland to report a marihuana finding. To address the change in the law regarding hemp and the amount of THC concentration, the Pikesville Unit has received funding to install a Liquid Chromatography-Mass Spectrometer (LC-MS) instrument to quantitate the amount of THC in plant material, as well as marihuana/hemp preparations. The NIST is collaborating with the lab to establish best practices for THC quantitation and train the chemists on the new instrumentation and workflow.

In 2019, MSP-FSD also began to utilize the National Medical Services (NMS) Laboratory in order to outsource some of the CDS casework received by both the Pikesville and Hagerstown CDS Units. The goals of this outsourcing effort are to reduce the backlog of cases for CDS as well as to complete casework which requires the reporting of THC quantitative results.

CDS-PIKESVILLE UNIT

The Pikesville CDS laboratory services primarily the Central Maryland counties including Baltimore City, Baltimore County, Carroll County, Cecil County, Anne Arundel County, Prince George's County, St. Mary's County, Kent County, Queen Anne's County, Calvert County, Charles County, Harford County and Howard County.

Where indicated, the data shown below does not include cases assigned to the Allied Forensic Scientists (Allied FS).

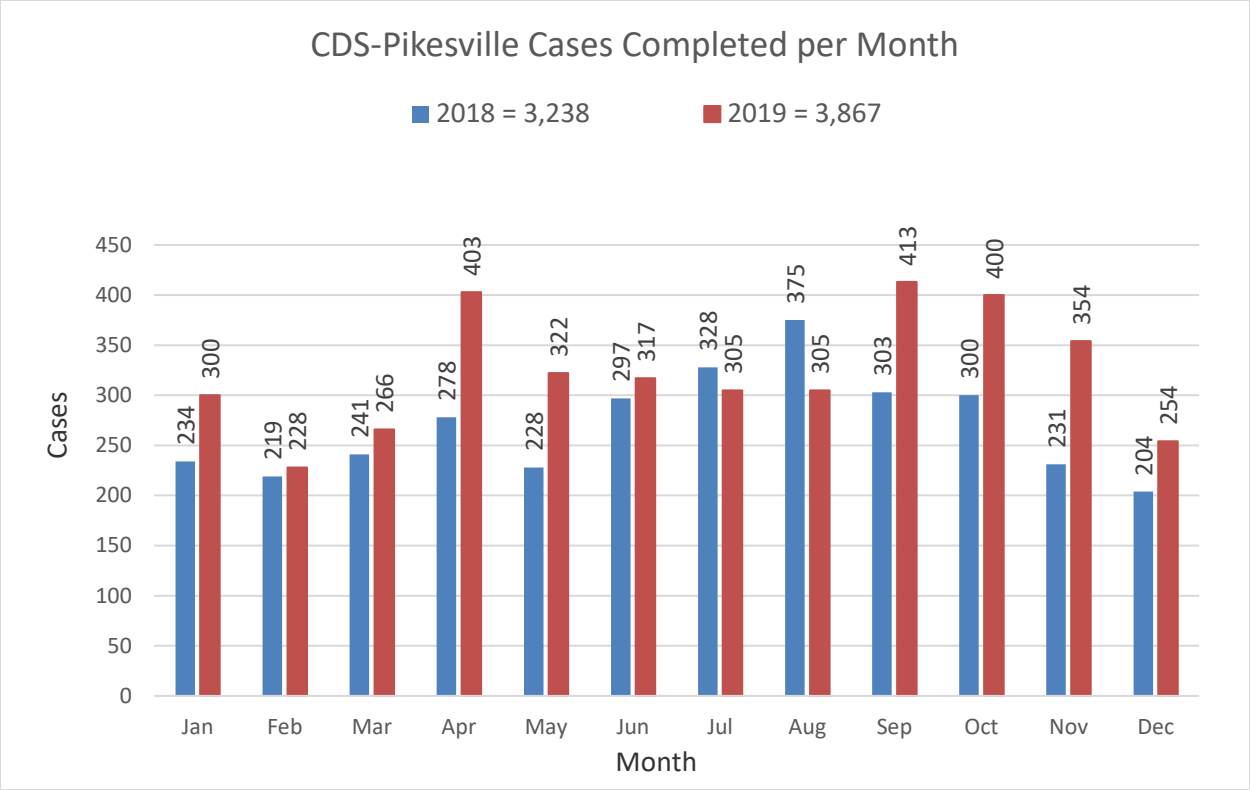


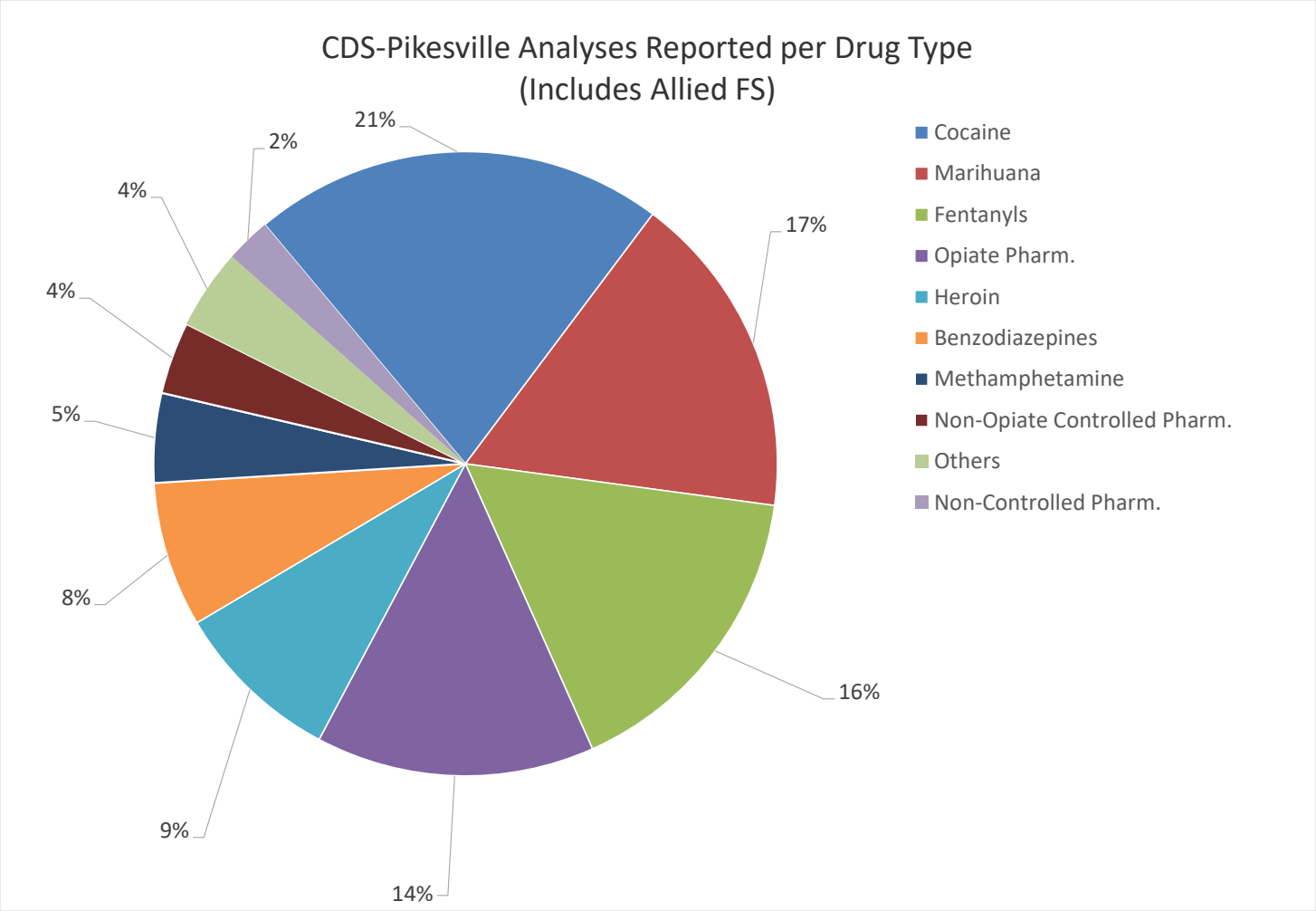
CDS-Pikesville Cases Received per MSP Installation*		
	Counties Served	**Submissions**
MSP-CID/CED	Statewide	182
MSP-Westminster	Carroll	166
MSP-Prince Frederick	Calvert	140
MSP-Leonardtown	St. Mary's	135
MSP-Golden Ring	Baltimore	106
MSP-JFK Hwy	Cecil, Harford, Baltimore	68
MSP-Bel Air	Harford	61
MSP-LaPlata	Charles	57
MSP-Glen Burnie	Anne Arundel	54
MSP-Centerville	Kent, Queen Anne's	50
MSP-College Park	Prince George's	47
MSP-Annapolis	Anne Arundel	41
MSP-Forestville	Prince George's	34
MSP-Easton	Caroline, Dorchester, Talbot	1
	TOTAL	**1,142**

* Does not include Allied FS

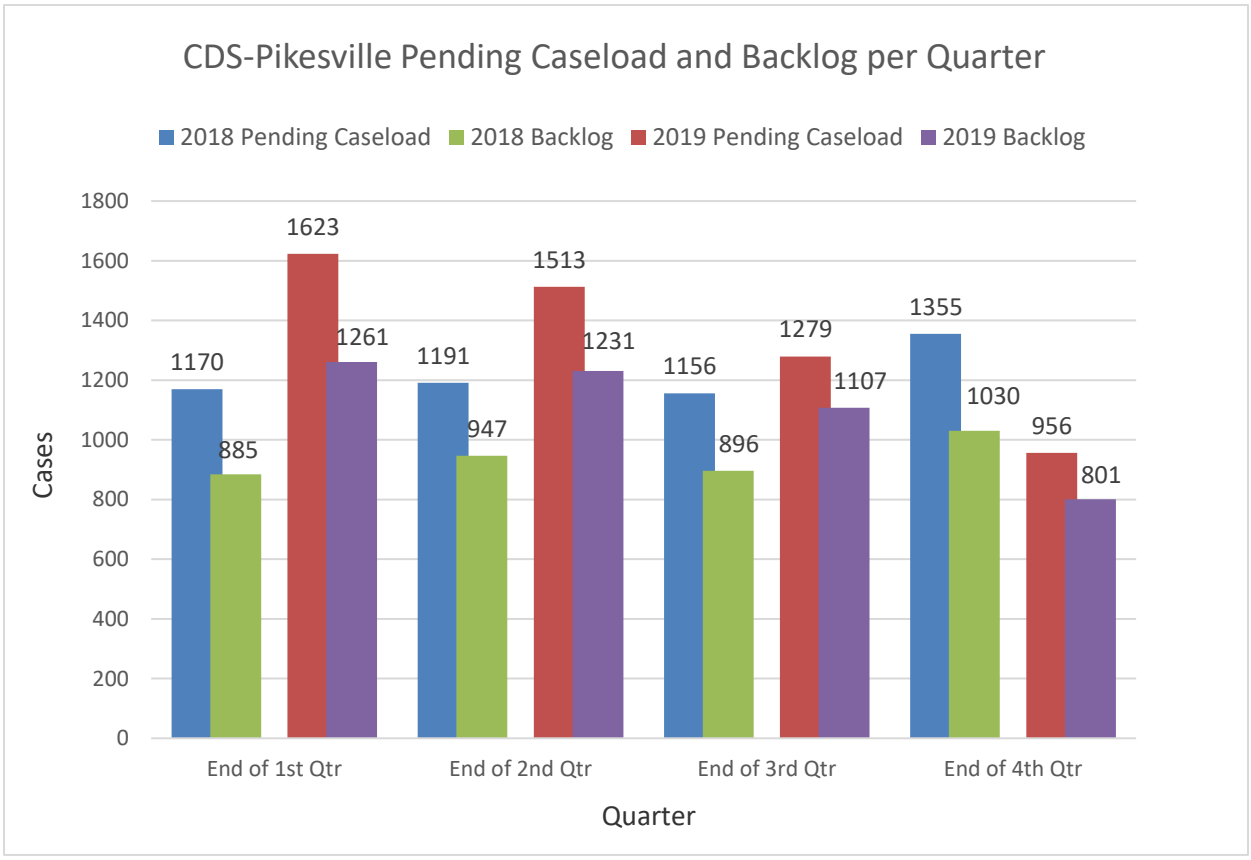
Allied Agency Cases Received by CDS-Pikesville per County*	
County	**Submissions**
Harford	456
Charles	449
Calvert	420
Baltimore City	296
Carroll	262
St. Mary's	208
Anne Arundel	98
Baltimore	39
Queen Anne's	28
Prince Georges	26
Kent	19
Montgomery	18
Washington	4
Allegany	2
Frederick	1
TOTAL	**2,326**

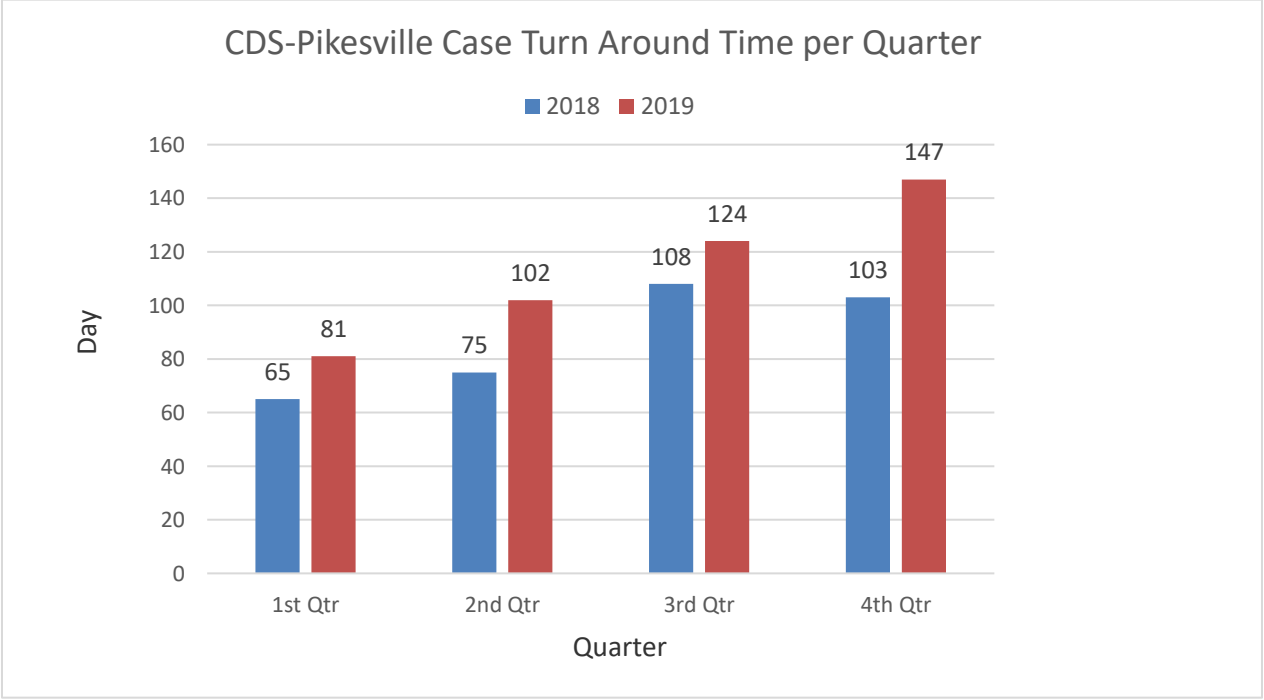
* Does not include Allied FS


CDS-Pikesville Cases Completed per Month
2018 = 3,238
2019 = 3,867
Cases
Month
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
234
300
219
228
241
266
278
403
228
322
297
317
328
305
375
305
303
413
300
400
231
354
204
254


CDS-Pikesville Analyses Reported per Drug Type
(Includes Allied FS)
21%
17%
16%
14%
9%
8%
5%
4%
4%
2%
Cocaine
Marihuana
Fentanyls
Opiate Pharm.
Heroin
Benzodiazepines
Methamphetamine
Non-Opiate Controlled Pharm.
Others
Non-Controlled Pharm.

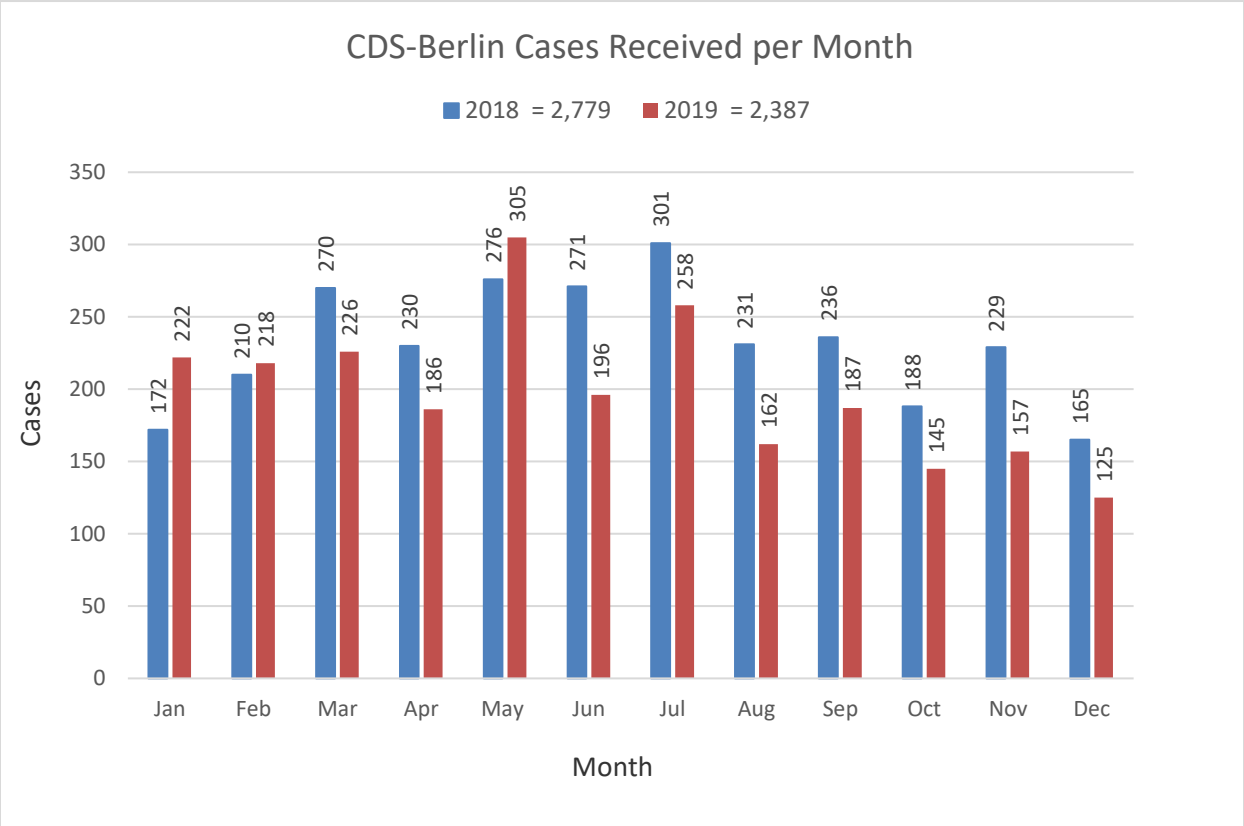
+


CDS-Pikesville Pending Caseload and Backlog per Quarter
2018 Pending Caseload
2018 Backlog
2019 Pending Caseload
2019 Backlog
Cases
1800
1600
1400
1200
1000
800
600
400
200
0
1170
885
1623
1261
1191
947
1513
1231
1156
896
1279
1107
1355
1030
956
801
End of 1st Qtr
End of 2nd Qtr
End of 3rd Qtr
End of 4th Qtr
Quarter


CDS-Pikesville Case Turn Around Time per Quarter
2018
2019
Day
160
140
120
100
80
60
40
20
0
65
81
75
102
108
124
103
147
1st Qtr
2nd Qtr
3rd Qtr
4th Qtr
Quarter

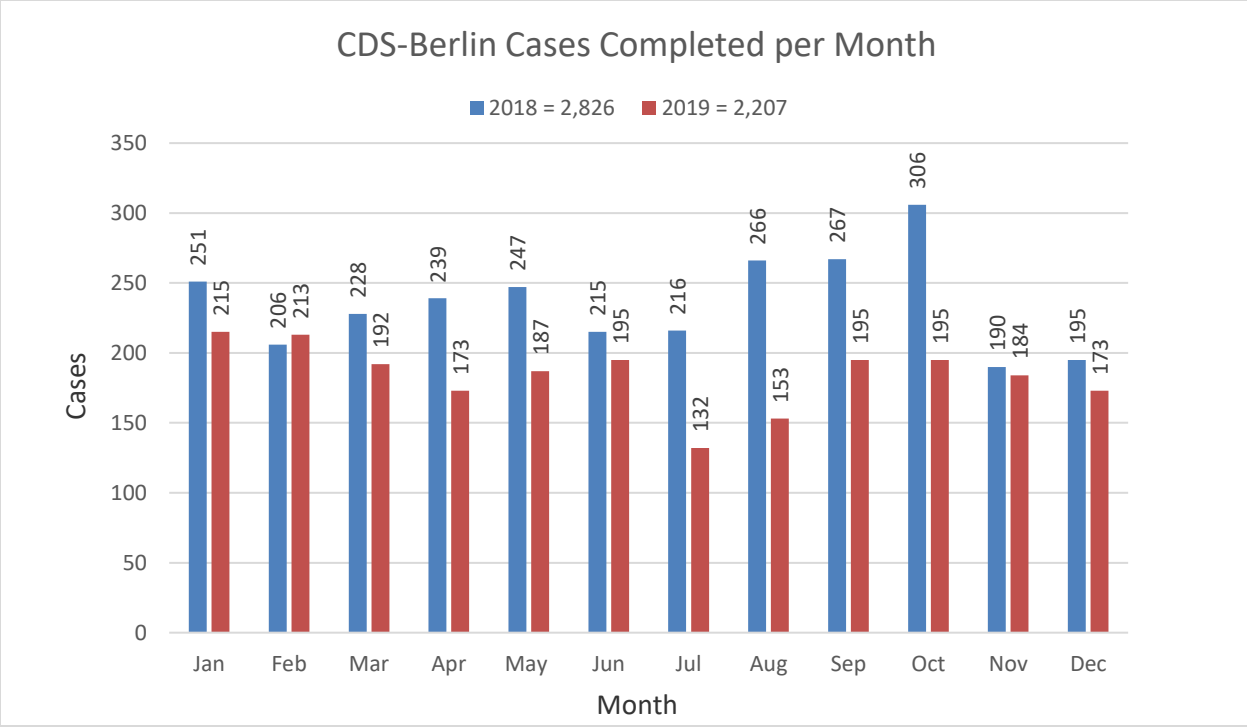
CDS-BERLIN UNIT

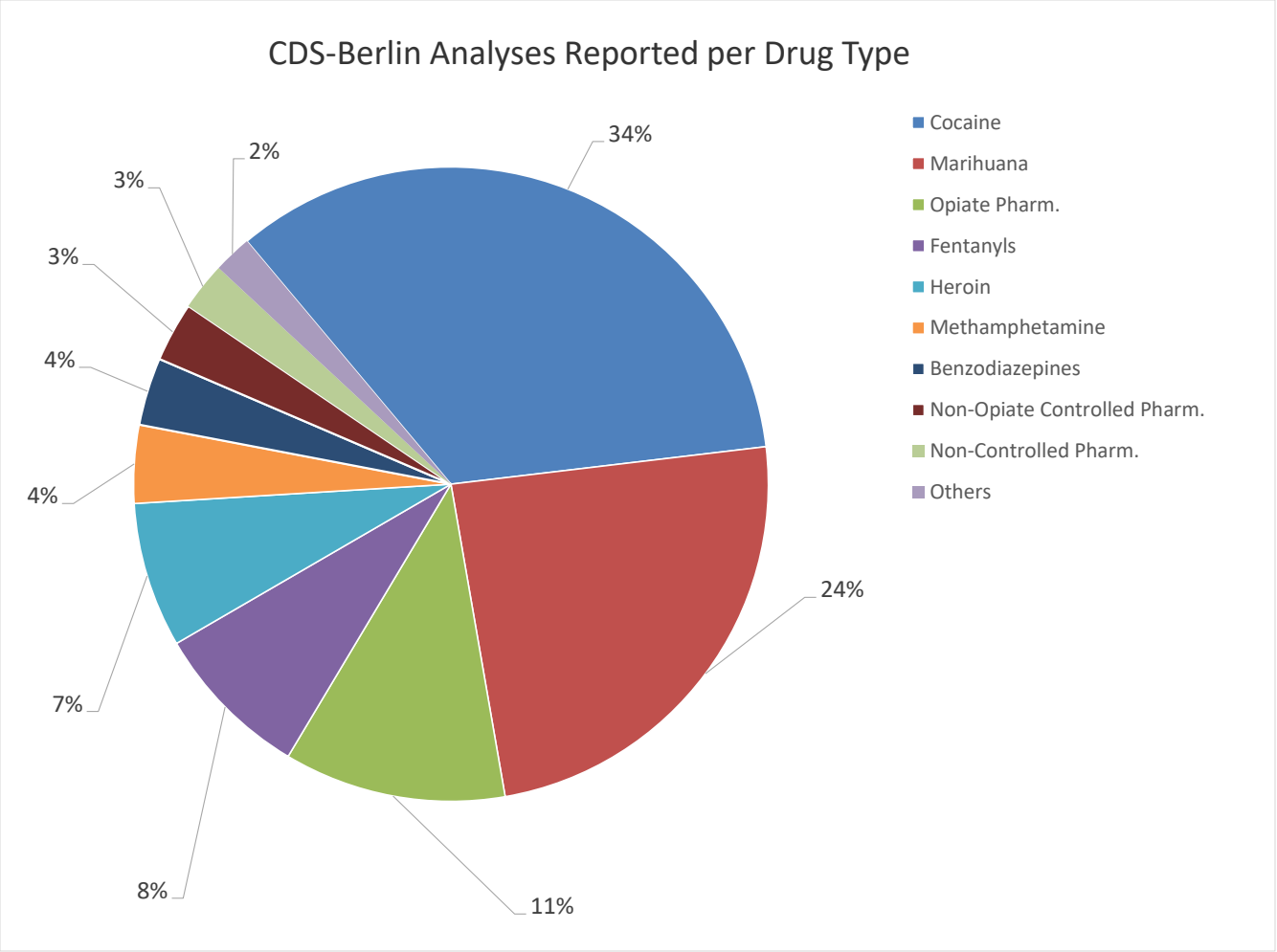
The CDS-Berlin laboratory services primarily the Eastern Maryland counties including Caroline County, Dorchester County, Kent County, Queen Anne's County, Somerset County, Talbot County, Wicomico County and Worcester County.

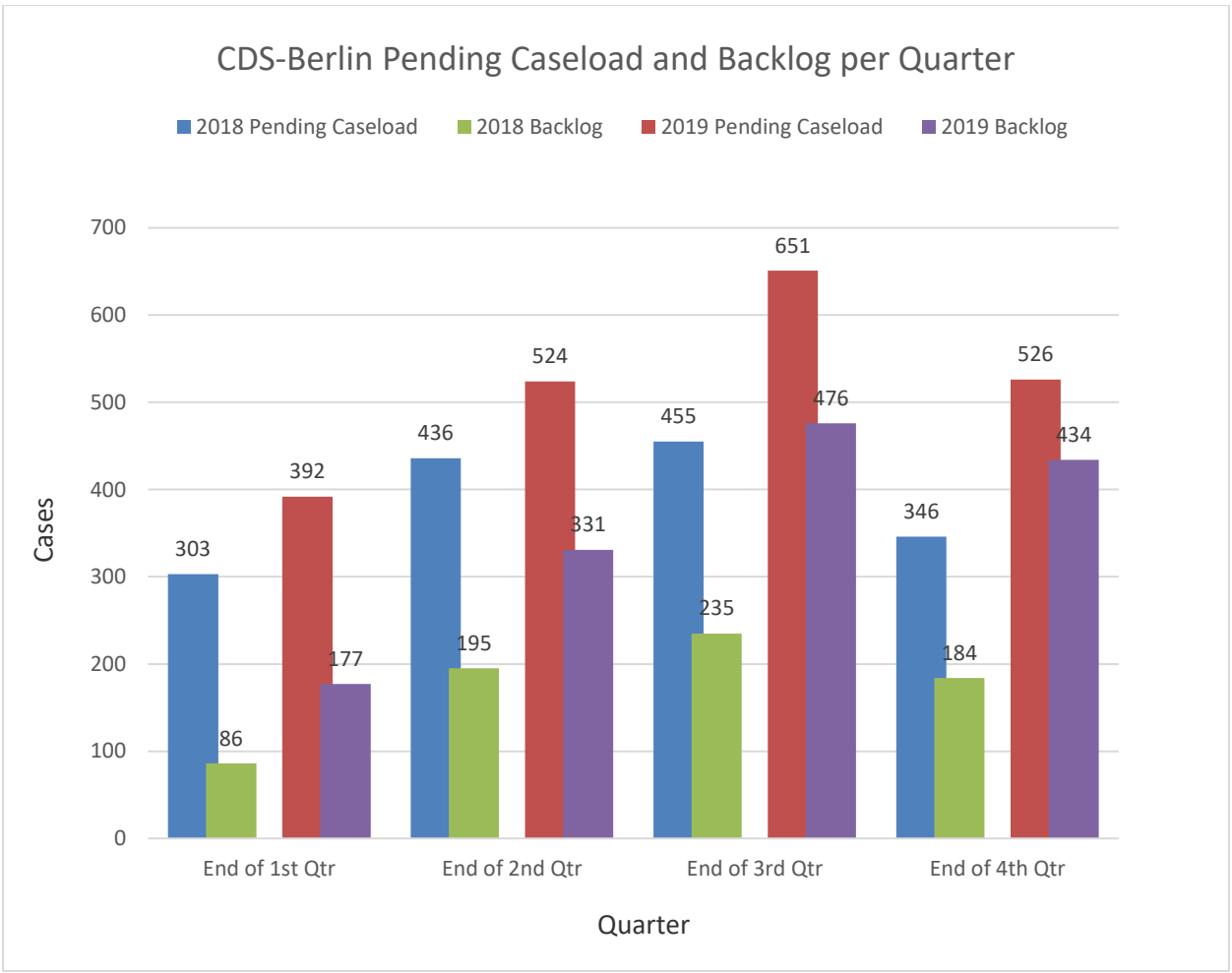


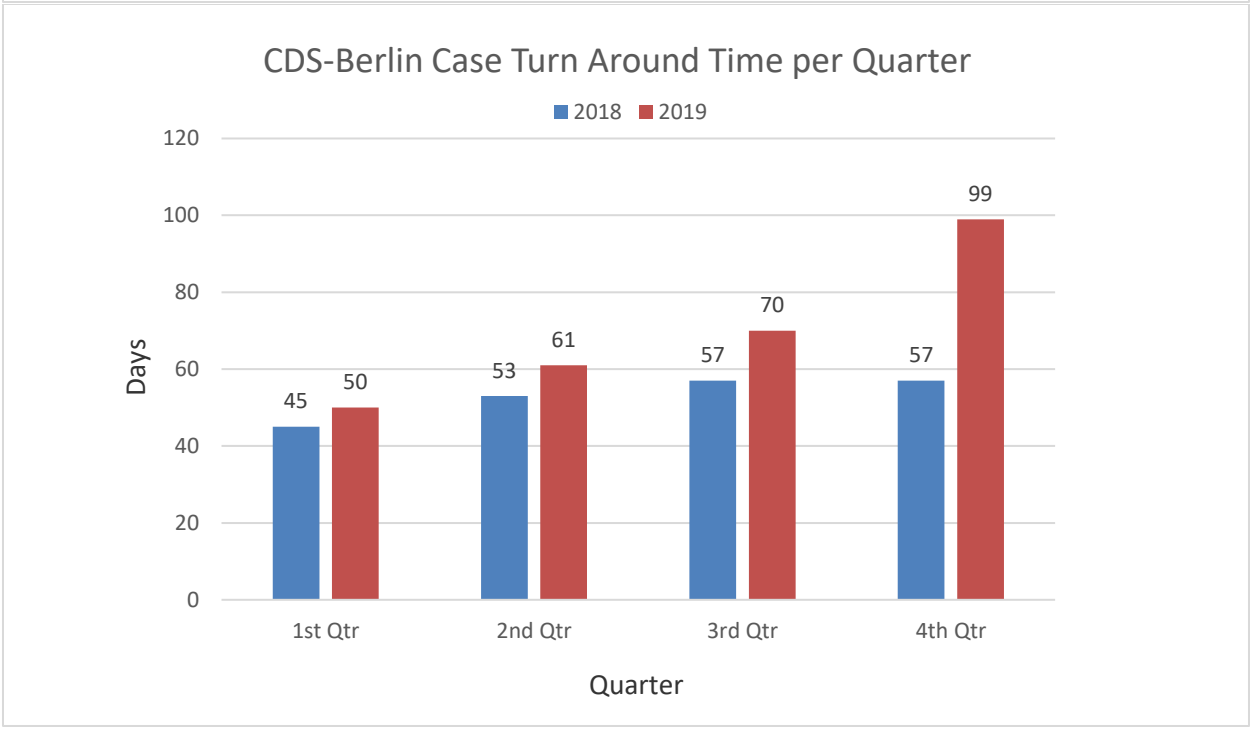
CDS-Berlin Cases Received per MSP Installation		
MSP Installation	**Counties Served**	**Submissions**
MSP-Easton	Caroline, Dorchester, Talbot	300
MSP-Centerville	Kent, Queen Anne's	137
MSP-Salisbury	Wicomico	102
MSP-Princess Anne	Somerset	65
MSP-Berlin	Worcester	51
MSP-CID/CED	Statewide	34
MSP-Crash Team	Statewide	1
	TOTAL	**690**

Allied Agency Cases Received by CDS-Berlin per County	
County	**Submissions**
Wicomico	552
Worcester	346
Talbot	253
Dorchester	209
Caroline	126
Queen Anne's	100
Somerset	59
Kent	49
Frederick	1
Out of State	1
Unknown	1
TOTAL	**1,697**


CDS-Berlin Cases Completed per Month
2018 = 2,826
2019 = 2,207
Cases
Month
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
251
215
206
213
228
192
239
173
247
187
215
195
216
132
266
153
267
195
306
195
190
184
195
173


CDS-Berlin Analyses Reported per Drug Type
34%
24%
11%
8%
7%
4%
4%
3%
3%
2%
Cocaine
Marihuana
Opiate Pharm.
Fentanyls
Heroin
Methamphetamine
Benzodiazepines
Non-Opiate Controlled Pharm.
Non-Controlled Pharm.
Others

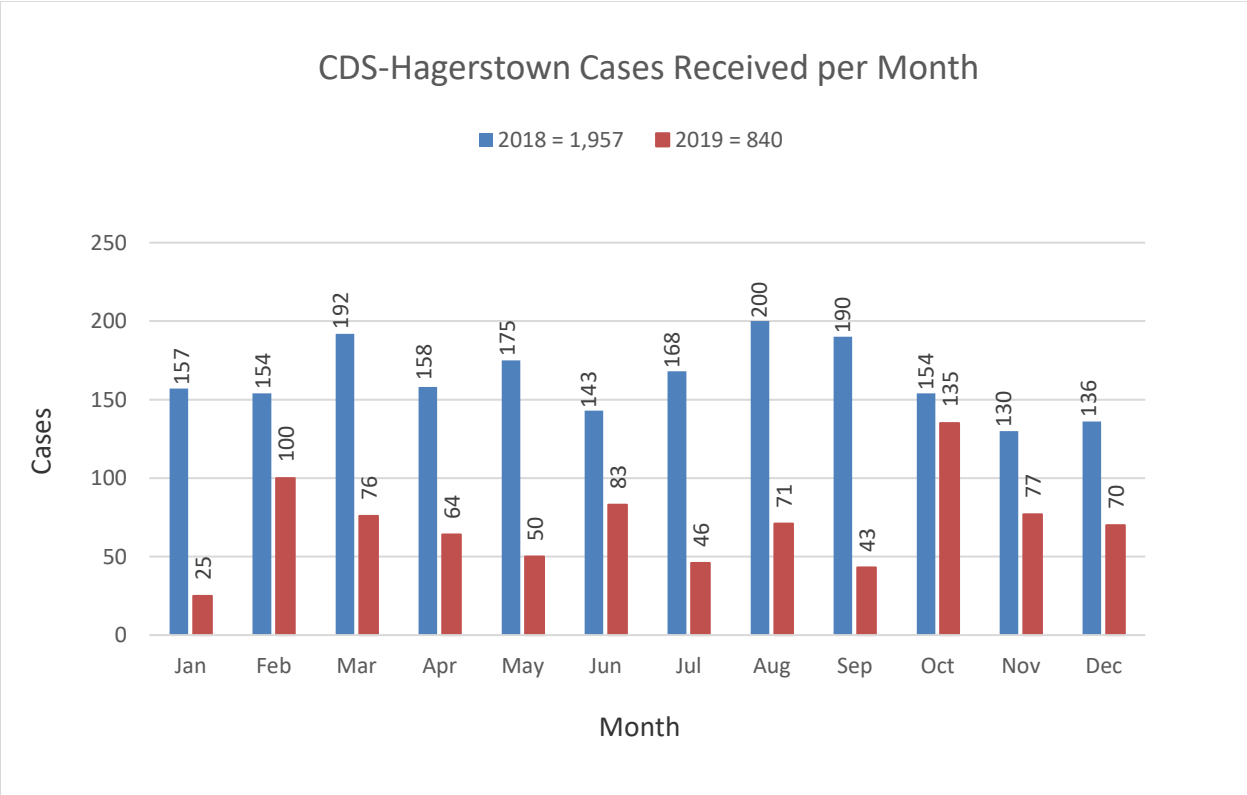

CDS-Berlin Pending Caseload and Backlog per Quarter
2018 Pending Caseload
2018 Backlog
2019 Pending Caseload
2019 Backlog
Cases
700
600
500
400
300
200
100
0
303
86
392
177
436
195
524
331
455
235
651
476
346
184
526
434
End of 1st Qtr
End of 2nd Qtr
End of 3rd Qtr
End of 4th Qtr
Quarter


CDS-Berlin Case Turn Around Time per Quarter
2018
2019
Days
120
100
80
60
40
20
0
45
50
53
61
57
70
57
99
1st Qtr
2nd Qtr
3rd Qtr
4th Qtr
Quarter

CDS-HAGERSTOWN UNIT

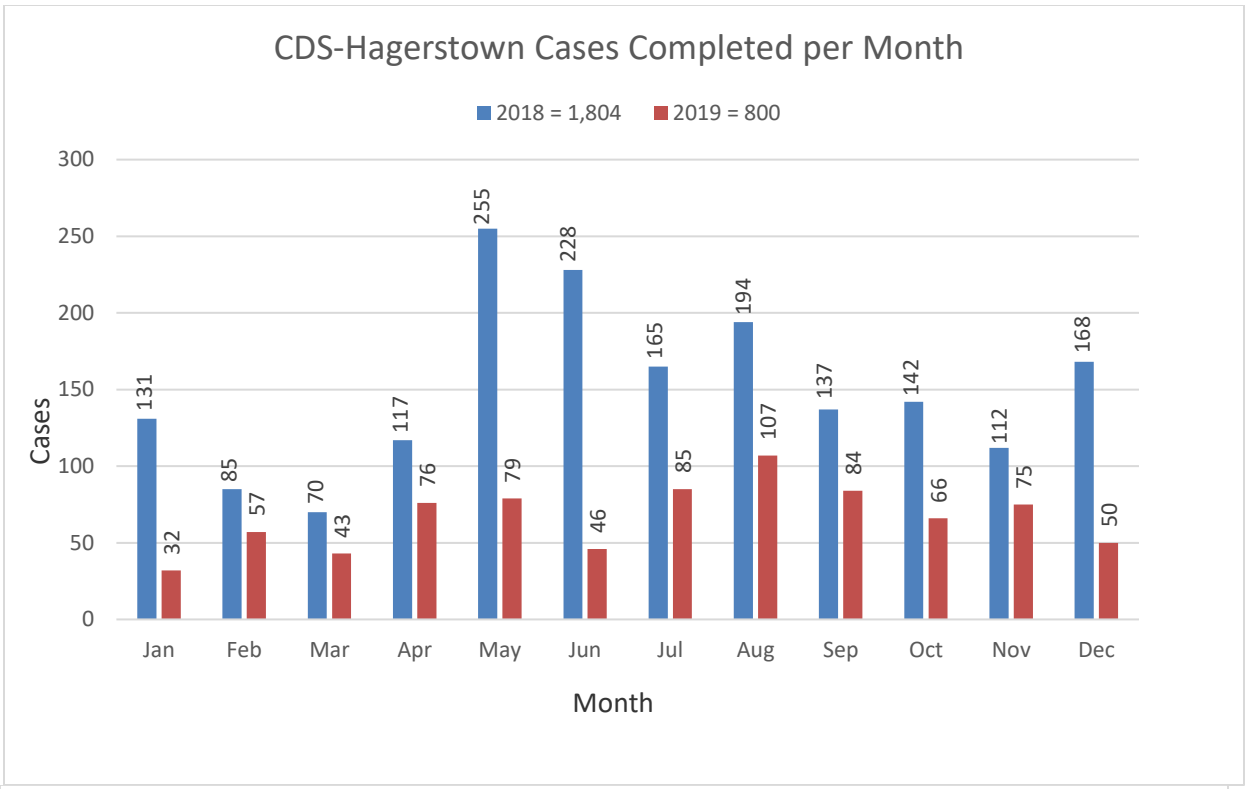
The Hagerstown CDS laboratory services primarily the Western Maryland counties including Washington County, Allegany County, Carroll County, Garrett County, Montgomery County and Frederick County.

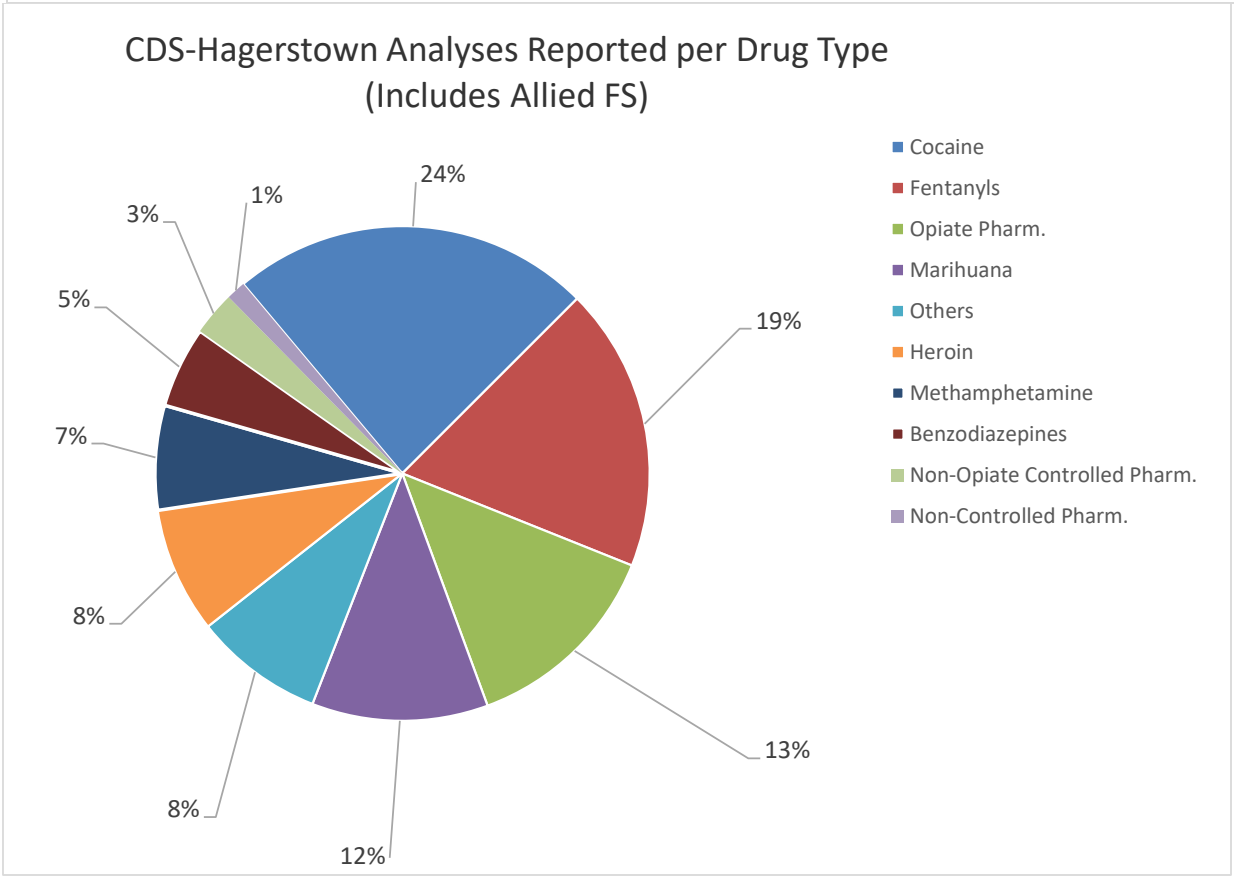
The Frederick County Allied Chemist position was vacant and then filled in 2018. In 2019, the allied chemist completed training. The CDS-Hagerstown Unit assumed the casework responsibilities and case backlog of that Allied Forensic Scientist while the position was vacant and during the time the chemist was in training in 2018. Therefore, the 2018 data shown below includes cases which would have been assigned to the Allied Forensic Scientist (Allied FS).

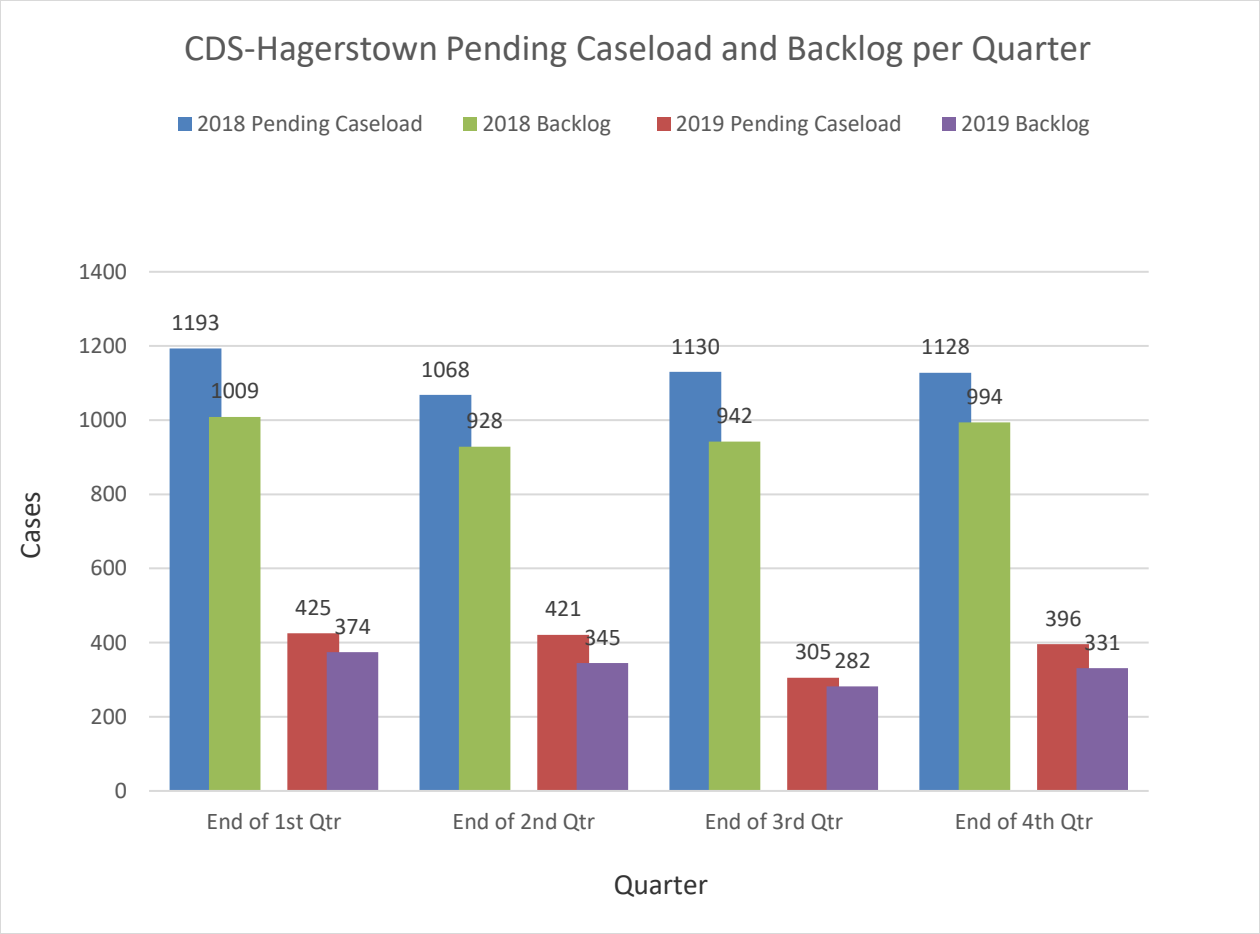


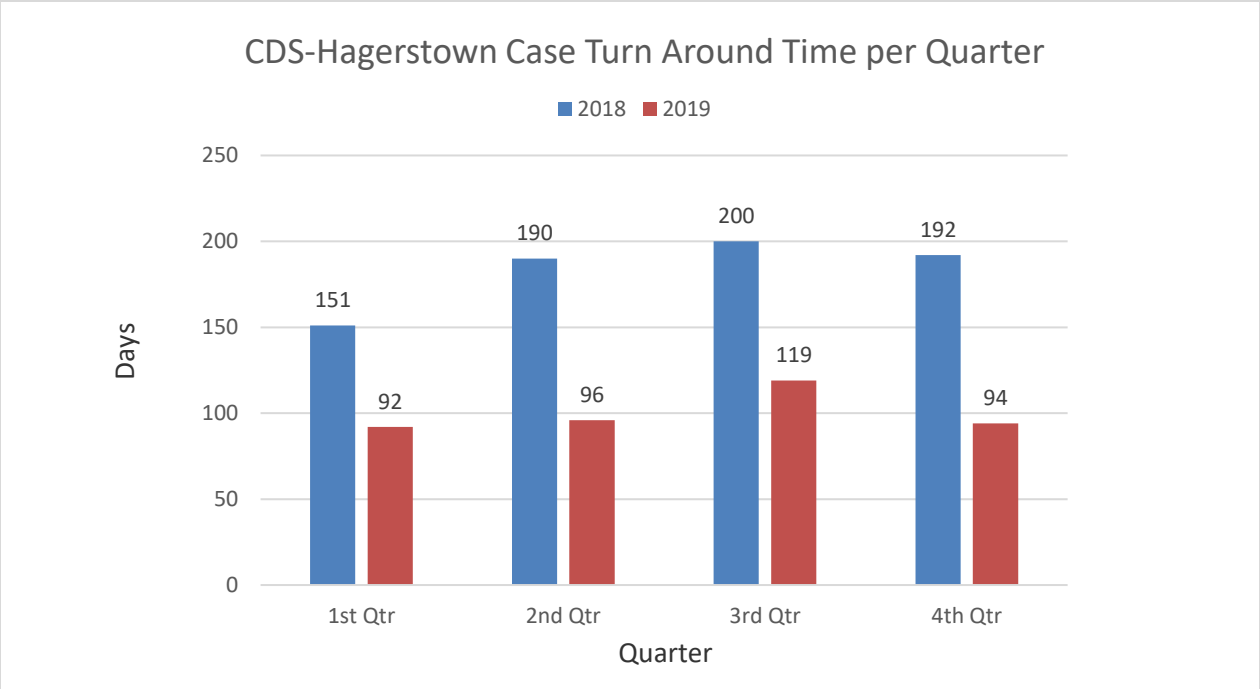
CDS-Hagerstown Cases Received per MSP Installation		
MSP Installation	**Counties Served**	**Submissions**
MSP-Cumberland	Statewide	197
MSP-Hagerstown	Washington	89
MSP-McHenry	Garrett	71
MSP-Westminster	Carroll	45
MSP-Rockville	Statewide	17
MSP-DED/C3I	Statewide	3
MSP-CID/CED	Statewide	1
	TOTAL	**423**

Allied Agency Cases Received by CDS-Hagerstown per County	
County	**Submissions**
Allegany	252
Carroll	71
Garrett	45
Washington	41
Frederick	6
Dorchester	1
Caroline	1
TOTAL	**417**


CDS-Hagerstown Cases Completed per Month
2018 = 1,804
2019 = 800
Cases
300
250
200
150
100
50
0
131
32
85
57
70
43
117
76
255
79
228
46
165
85
194
107
137
84
142
66
112
75
168
50
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Month


CDS-Hagerstown Analyses Reported per Drug Type
(Includes Allied FS)
24%
19%
13%
12%
8%
8%
7%
5%
3%
1%
Cocaine
Fentanyls
Opiate Pharm.
Marihuana
Others
Heroin
Methamphetamine
Benzodiazepines
Non-Opiate Controlled Pharm.
Non-Controlled Pharm.


CDS-Hagerstown Pending Caseload and Backlog per Quarter
2018 Pending Caseload
2018 Backlog
2019 Pending Caseload
2019 Backlog
1400
1200
1000
800
600
400
200
0
Cases
1193
1009
425
374
1068
928
421
345
1130
942
305
282
1128
994
396
331
End of 1st Qtr
End of 2nd Qtr
End of 3rd Qtr
End of 4th Qtr
Quarter

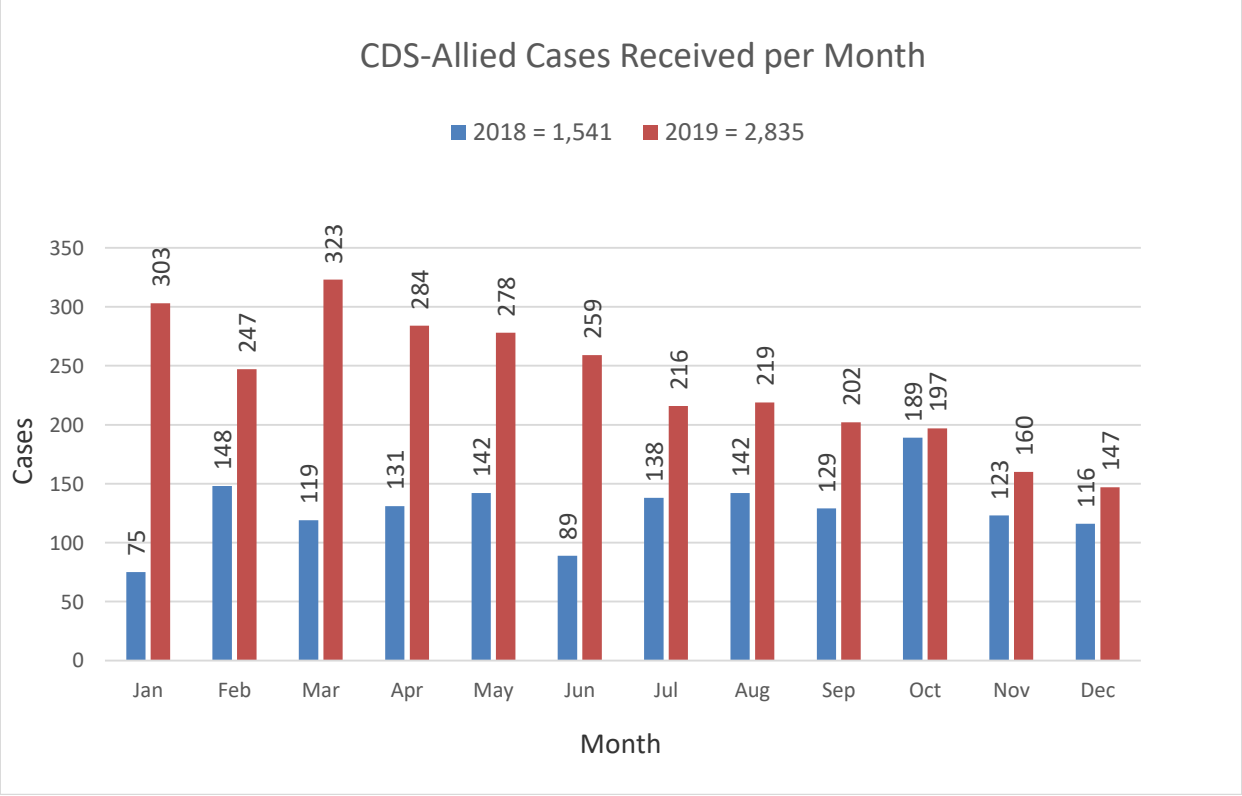

CDS-Hagerstown Case Turn Around Time per Quarter
2018
2019
250
200
150
100
50
0
Days
151
92
190
96
200
119
192
94
1st Qtr
2nd Qtr
3rd Qtr
4th Qtr
Quarter

CDS-ALLIED FORENSIC SCIENTIST PROGRAM

The Allied Forensic Scientists working in the CDS Units are employees of allied agencies or other governmental entities. These scientists are authorized to perform CDS analysis in MSP-FSD facilities under the provisions provided for in a Memorandum of Understanding. Even though these scientists are not MSP employees, they perform forensic testing in accordance with the MSP-FSD management system by complying with the MSP-FSD Quality Assurance Manual and following the MSP-FSD standard operating procedures.

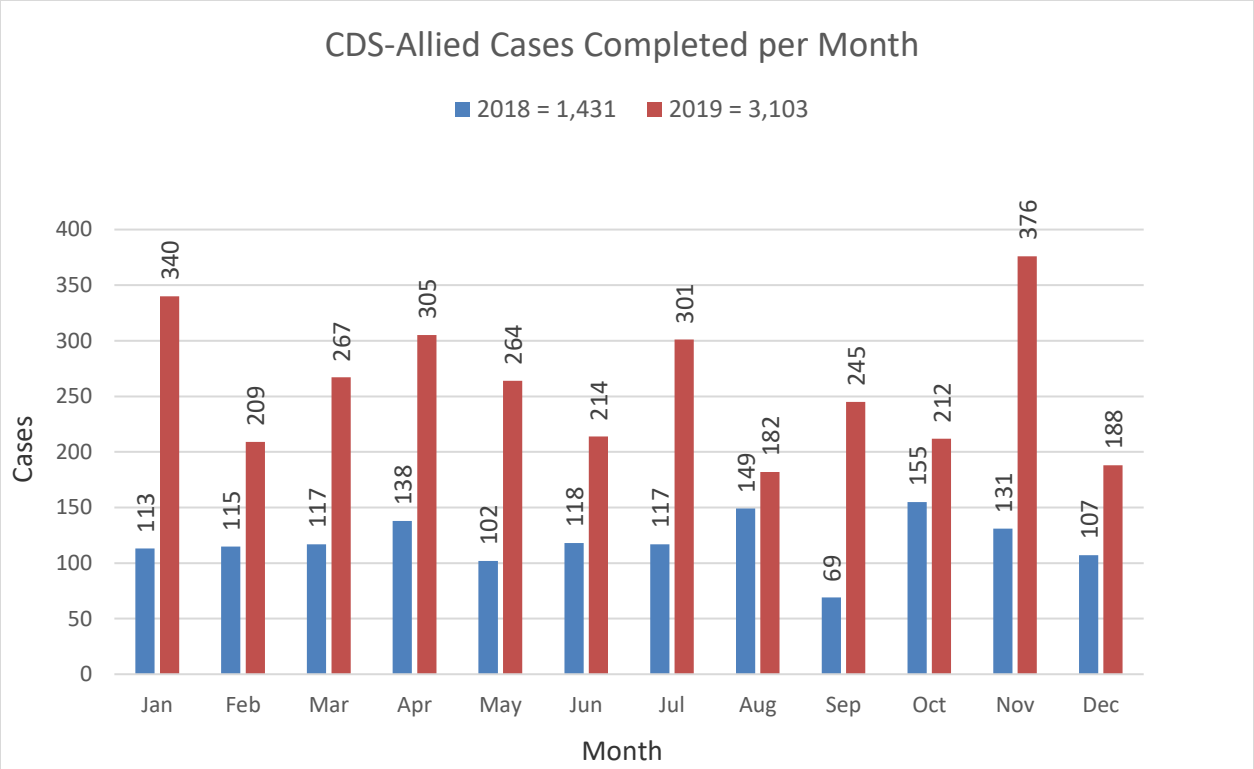
Four Allied Forensic Scientists, representing the following agencies, work in the CDS Units: Howard County Police Department, Cecil County State's Attorney's Office, Frederick County State's Attorney's Office, and St. Mary's County State's Attorney's Office in conjunction with Calvert County State's Attorney's Office.

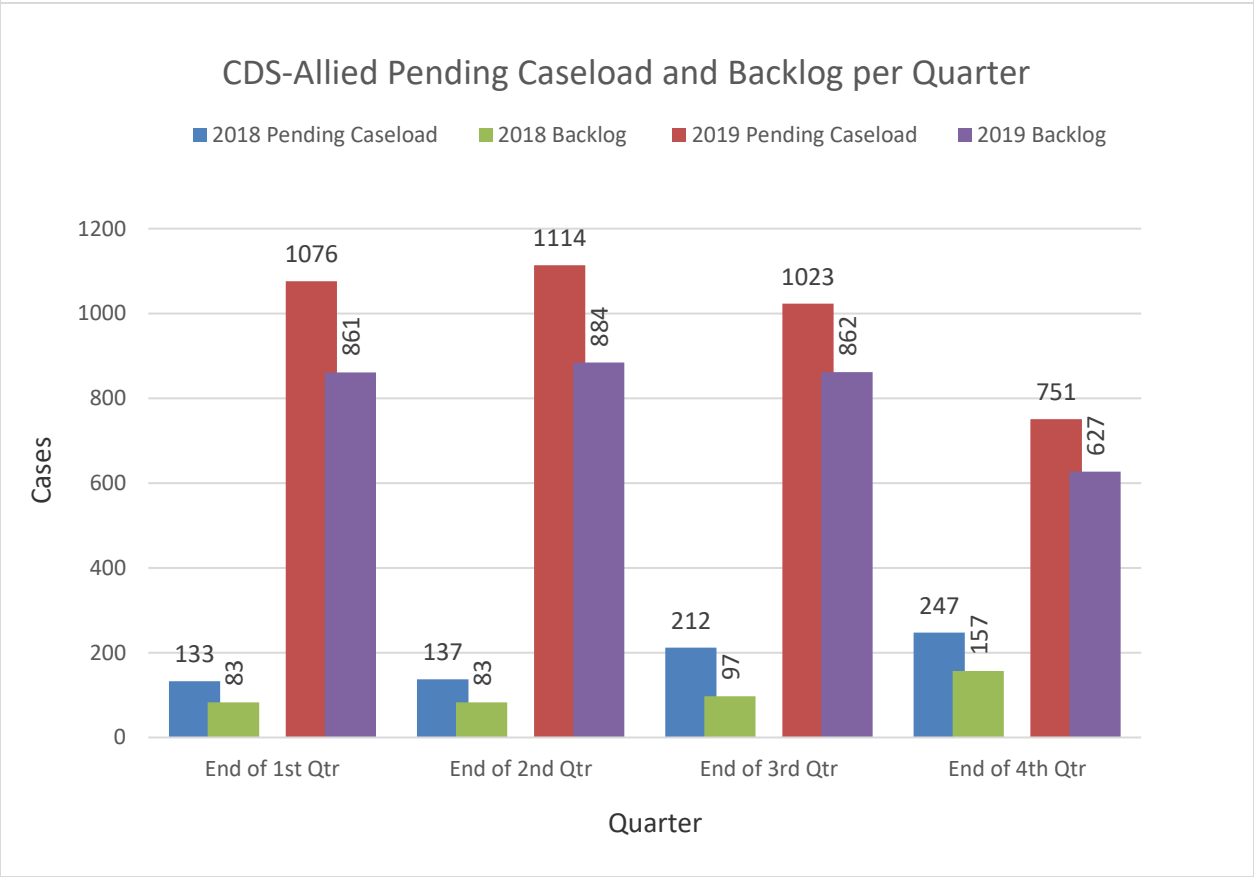
The Frederick County Allied Chemist position was filled in 2018, and the chemist completed training in 2019. The CDS-Hagerstown Unit assumed the casework responsibilities and case backlog of that Allied Forensic Scientist in 2018. In this report, the Frederick County casework statistics for 2018 are included under the CDS-Hagerstown Unit. The St. Mary's County/Calvert County Allied Chemist position was filled in 2019, and the chemist is still in training. Until the training is completed, the CDS-Pikesville Unit will assume the casework responsibilities and case backlog of that Allied Forensic Scientist. In this report, the St. Mary's County/Calvert County casework statistics are included under the CDS-Pikesville Unit for 2018 and 2019.

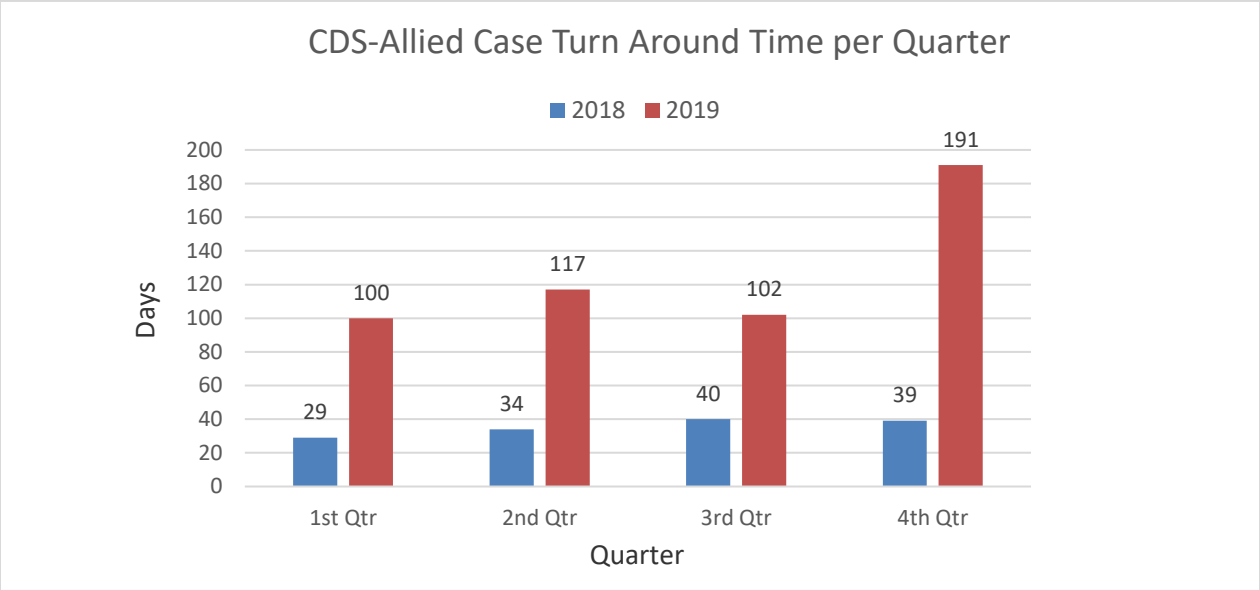


CDS Cases Received by Allied Forensic Scientists per MSP Installation		
MSP Installation	**Counties Served**	**Submissions**
MSP-North East	Cecil	205
MSP-Frederick	Frederick	178
MSP-Waterloo	Howard	119
MSP-CID/CED	Statewide	88
MSP-JFK Hwy	Cecil, Harford, Baltimore	43
MSP-Hagerstown	Washington	1
MSP-Westminster	Carroll	1
MSP-Golden Ring	Baltimore	1
	TOTAL	**636**

CDS Cases Received by Allied Forensic Scientists from Allied Agencies per County	
County	**Submissions**
Frederick	1,105
Cecil	657
Howard	437
TOTAL	**2,199**


CDS-Allied Cases Completed per Month
2018 = 1,431
2019 = 3,103
Cases
Month
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
113
340
115
209
117
267
138
305
102
264
118
214
117
301
149
182
69
245
155
212
131
376
107
188


CDS-Allied Pending Caseload and Backlog per Quarter
2018 Pending Caseload
2018 Backlog
2019 Pending Caseload
2019 Backlog
Cases
Quarter
End of 1st Qtr
End of 2nd Qtr
End of 3rd Qtr
End of 4th Qtr
133
83
1076
861
137
83
1114
884
212
97
1023
862
247
157
751
627


CDS-Allied Case Turn Around Time per Quarter
2018
2019
Days
200
180
160
140
120
100
80
60
40
20
0
29
100
34
117
40
102
39
191
1st Qtr
2nd Qtr
3rd Qtr
4th Qtr
Quarter

CDS UNIT/ HITDA DATA ANALYSIS

Drug Categories Identified in 2019

Month	Cocaine	Marihuana	Heroin	Opioids*	Phenethylamine**	Synthetic Cannabinoid	Controlled Rx	Rx	Over-the-Counter	PCP/Analogs	Psychedelic	Steroid	Cathinones	Tryptamine	No CDS Detected	Not Analyzed	n/a	Insufficient Data	Other	Grand Total
JAN	351	346	121	318	66	36	128	14	4	13	7	3	18	1	121	50	3	75	28	1,703
FEB	283	303	113	268	76	12	188	35	8	9	3	3	11	0	95	64	0	40	6	1,517
MAR	307	405	127	307	89	24	133	26	2	14	7	1	8	0	125	73	9	50	28	1,735
APR	329	327	136	378	113	29	199	25	1	11	2	7	4	0	147	46	8	80	25	1,867
MAY	281	388	96	283	116	17	151	24	7	8	4	3	0	1	138	48	4	63	19	1,651
JUN	307	296	118	306	136	7	183	26	3	14	11	0	3	1	116	67	11	81	43	1,729
JUL	327	221	158	338	111	9	177	24	4	11	4	0	7	1	121	28	1	115	31	1,688
AUG	329	133	97	297	110	11	166	21	4	13	4	1	2	0	81	62	14	79	14	1,438
SEP	364	113	106	340	136	41	179	26	4	7	15	1	5	0	93	36	5	102	18	1,591
OCT	355	131	97	320	107	86	175	33	10	15	5	0	16	0	139	0	8	90	14	1,601
NOV	310	47	78	273	99	39	138	13	5	6	6	1	10	1	86	1	3	57	20	1,193
DEC	344	15	82	265	91	16	152	21	2	4	4	0	10	0	97	0	4	66	17	1190
Total	**3,887**	**2,725**	**1,329**	**3,693**	**1,250**	**327**	**1,969**	**288**	**54**	**125**	**72**	**20**	**94**	**5**	**1,359**	**475**	**70**	**898**	**263**	**18,903**
%	20.5	14.4	7	20	6.6	1.7	10.4	1.5	0.3	0.66	0.38	0.1	0.5	0.02	7.2	2.5	0.37	4.7	1.4	

*The Opioids group includes Fentanyl, Fentanyl Analogues, Oxycodone, Tramadol, Methadone, Hydrocodone, Morphine, Oxymorphone, Codeine mixtures, Tarpentadol, and a Fentanyl precursor 4-Anilino-N-phenethyl-4-piperidine (ANPP).
**The Phenethylamine group includes Methamphetamine, Amphetamine, and MDMA

TOXICOLOGY UNIT

The Toxicology Unit is responsible for the analysis of alcohol and drugs contained in blood specimens submitted to the MSP-FSD. Testing is performed in conjunction with the Driving While Impaired (DWI) program of the Maryland State Police and the State Toxicologist's Office. Testing for alcohol and drugs is performed for both the Maryland State Police and allied law enforcement agencies requiring laboratory support for impaired driving programs.

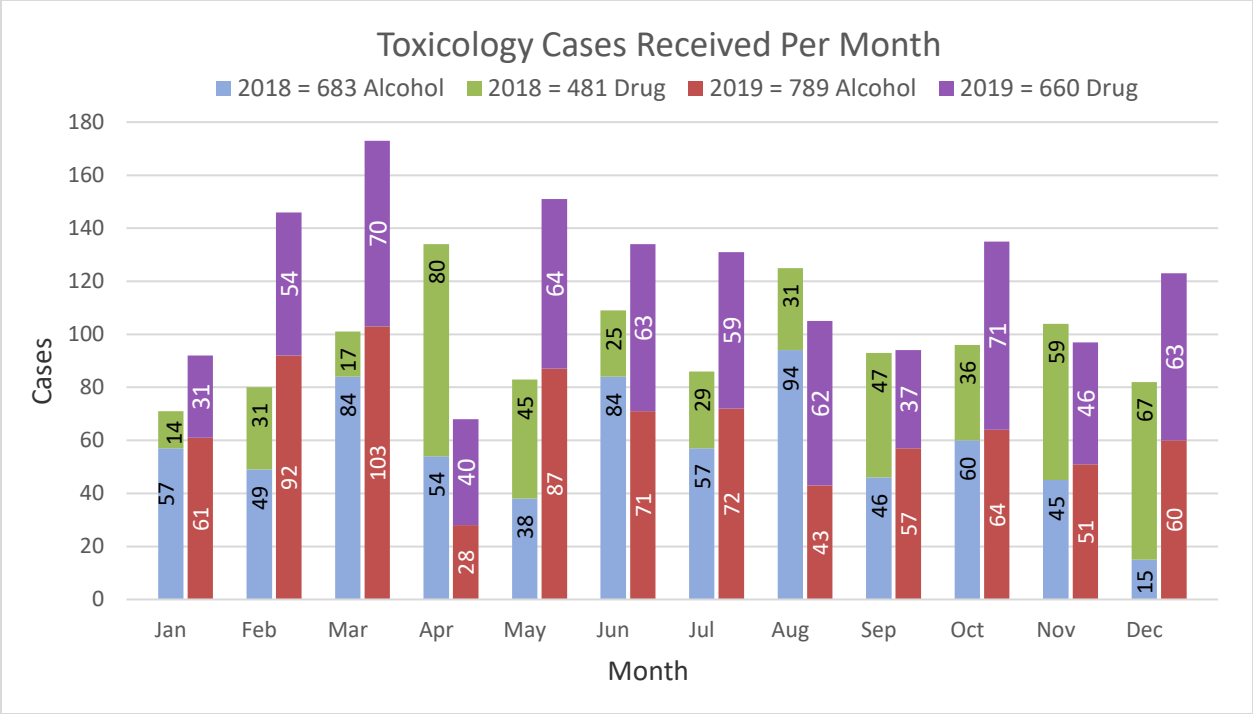
The Toxicology Unit is the only laboratory within the state approved by the State of Maryland, Office of the Chief Medical Examiner to analyze blood samples for alcohol and drugs in cases related to DWI arrests. Blood specimens submitted to the Toxicology Unit for testing are collected by qualified medical personnel when requested by police. Blood is collected from suspected impaired drivers after being taken to hospital for injury, or at the request of a Drug Recognition Expert Officer when drug impairment is suspected. Many cases, therefore, involve serious personal injury and manslaughter charges that require the Forensic Scientist's expert testimony at trial.

The Toxicology Unit has continued to deal with staffing issues. A Forensic Scientist II was in training for Blood Drug analysis, but resigned in the last quarter of the year. Another Forensic Scientist I began training for Blood Alcohol analysis in the last quarter of the year. The unit continues to benefit from a contractual employee who assists with casework review.

In 2019, the unit expanded their implementation of LC/MS/MS confirmation testing to include fentanyl in the opiate panel. The opiate panel now consists of morphine, codeine, oxycodone, oxymorphone, hydrocodone, hydromorphone, methadone, buprenorphine and fentanyl confirmation testing.

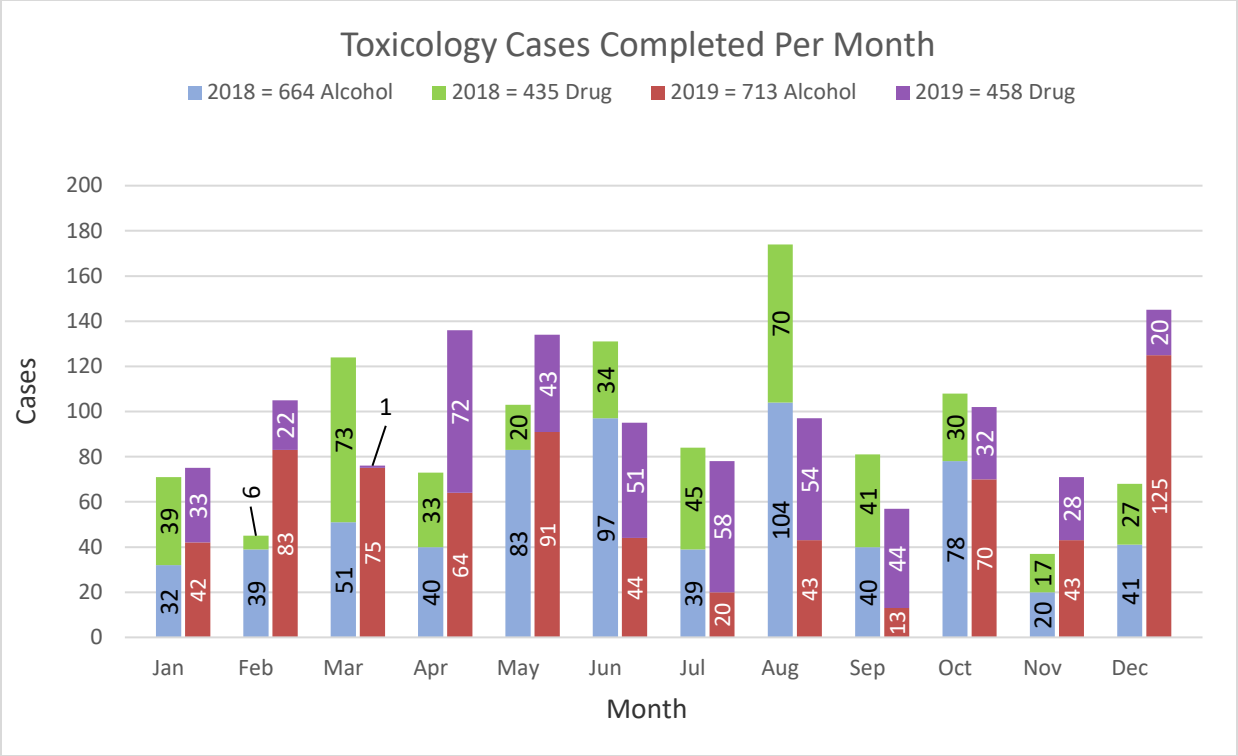
The Toxicology Unit also saw an increase in cases received in 2019. There were 37% more blood drug cases and 16% more blood alcohol received by the unit.

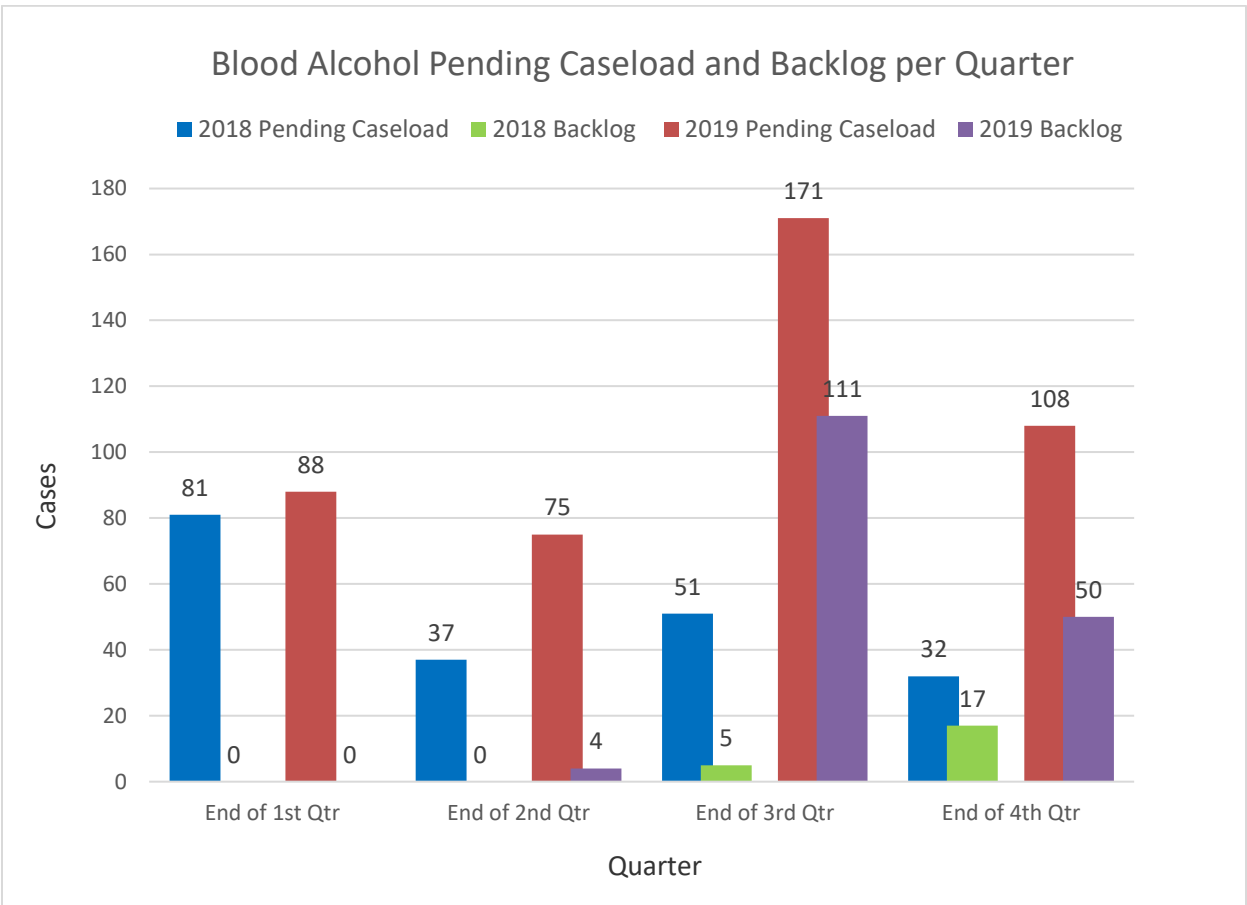
Due to the influx of cases, the staffing issues and the instrumental developments noted above, the Toxicology Unit experienced a significant casework backlog increase in 2019. Funding for outsourcing has been obtained to help address the backlog, allowing the unit to focus their attention on training new staff and validating a new GC-MS instrument.

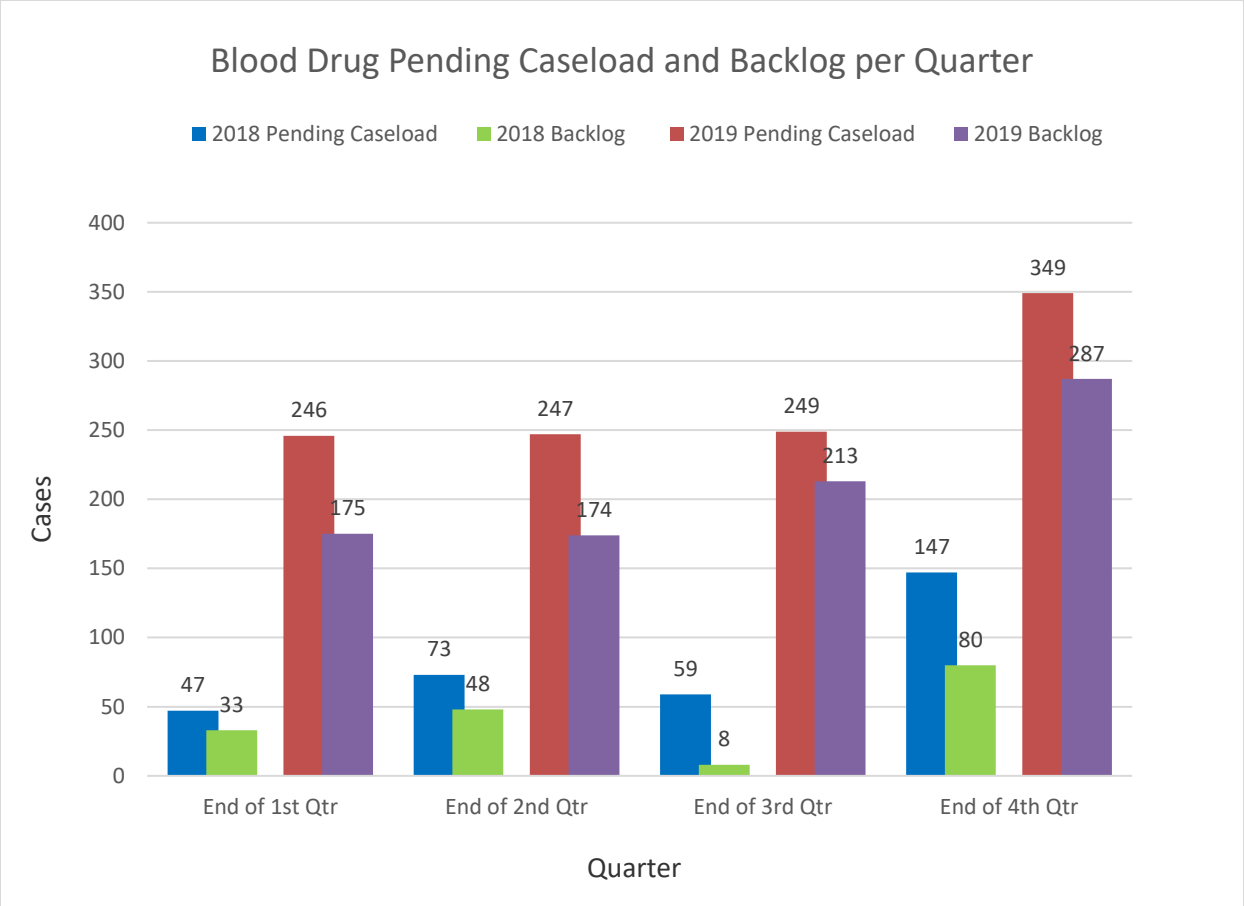

Toxicology Cases Received Per Month
2018 = 683 Alcohol
2018 = 481 Drug
2019 = 789 Alcohol
2019 = 660 Drug
Cases
Month
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
57
14
61
31
49
31
92
54
84
17
103
70
54
80
28
40
38
45
87
64
84
25
71
63
57
29
72
59
94
31
43
62
46
47
57
37
60
36
64
71
45
59
51
46
15
67
60
63

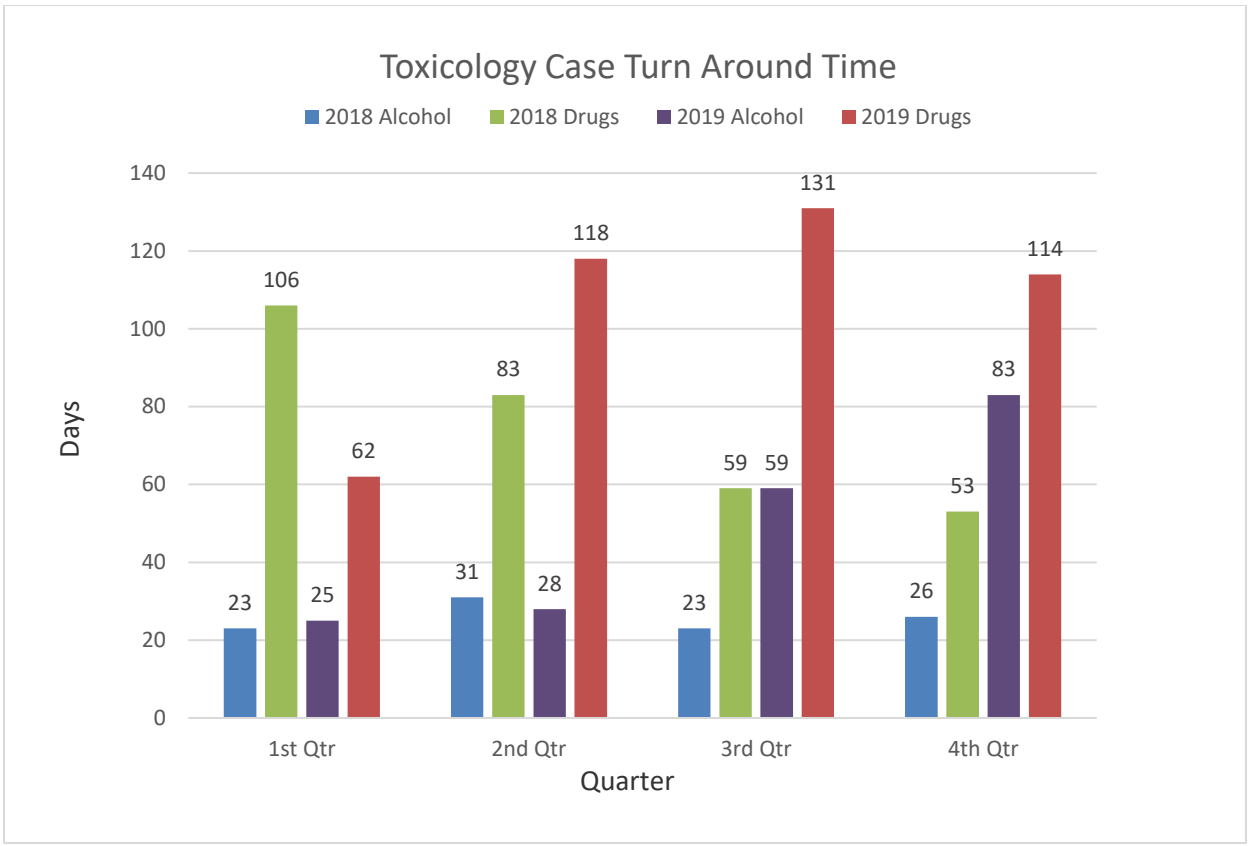
Toxicology Cases Received per MSP Installation		
MSP Installation	**Counties Served**	**Submissions**
MSP-Golden Ring	Baltimore	67
MSP-Frederick	Frederick	44
MSP-Westminster	Carroll	41
MSP-Easton	Caroline, Dorchester, Talbot	37
MSP-Bel Air	Harford	34
MSP-Hagerstown	Washington	32
MSP-LaPlata	Charles	28
MSP-Glen Burnie	Anne Arundel	26
MSP-Centerville	Kent, Queen Anne's	24
MSP-JFK Hwy	Cecil, Harford, Baltimore	23
MSP-Forestville	Prince George's	23
MSP-Leonardtown	St. Mary's	22
MSP-College Park	Prince George's	17
MSP-Waterloo	Howard	14
MSP-Salisbury	Wicomico	14
MSP-Prince Frederick	Calvert	13
MSP-Berlin	Worcester	12
MSP-Cumberland	Allegany	11
MSP-Rockville	Montgomery	11
MSP-Annapolis	Anne Arundel	11
MSP-Princess Anne	Somerset	6
MSP-North East	Cecil	5
MSP-McHenry	Garrett	4
	TOTAL	**519**

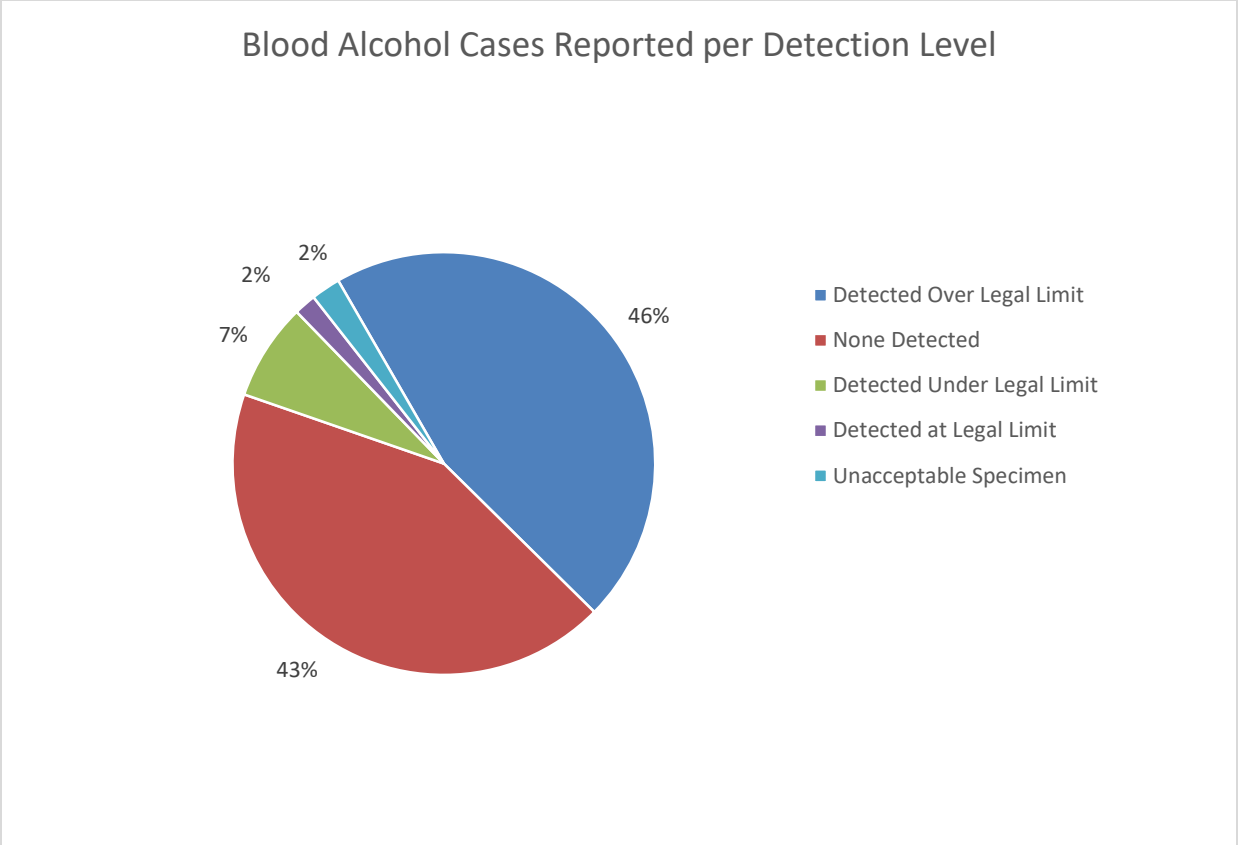
Toxicology Cases Received from Allied Agencies by County	
County	**Submissions**
Baltimore	177
Anne Arundel	149
Montgomery	99
Frederick	54
Prince Georges	52
Harford	50
Howard	44
Charles	42
Baltimore City	41
Carroll	39
Washington	39
Calvert	30
Allegany	23
St. Mary's	19
Worcester	14
Talbot	13
Cecil	12
Wicomico	8
Unknown	8
Caroline	7
Dorchester	4
Queen Anne's	3
Garrett	2
Statewide	1
TOTAL	**930**

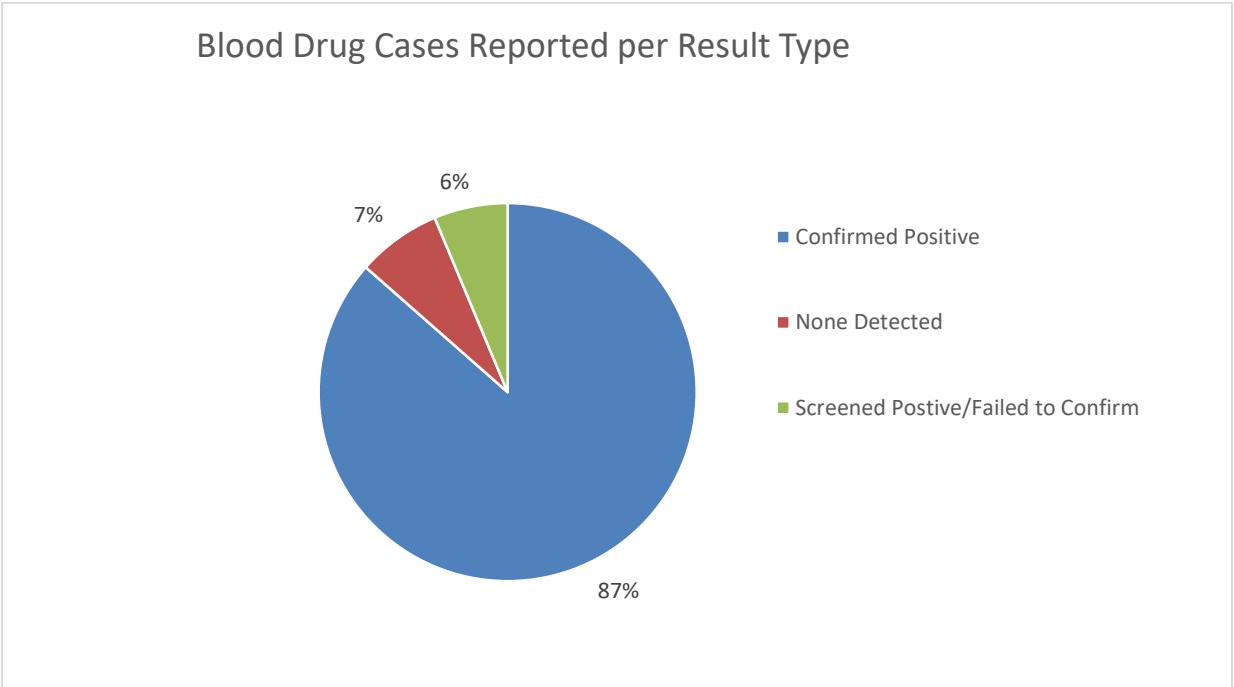

Toxicology Cases Completed Per Month
2018 = 664 Alcohol
2018 = 435 Drug
2019 = 713 Alcohol
2019 = 458 Drug
Cases
Month
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
32
39
42
33
39
6
83
22
51
73
75
1
40
33
64
72
83
20
91
43
97
34
44
51
39
45
20
58
104
70
43
54
40
41
13
44
78
30
70
32
20
17
43
28
41
27
125
20

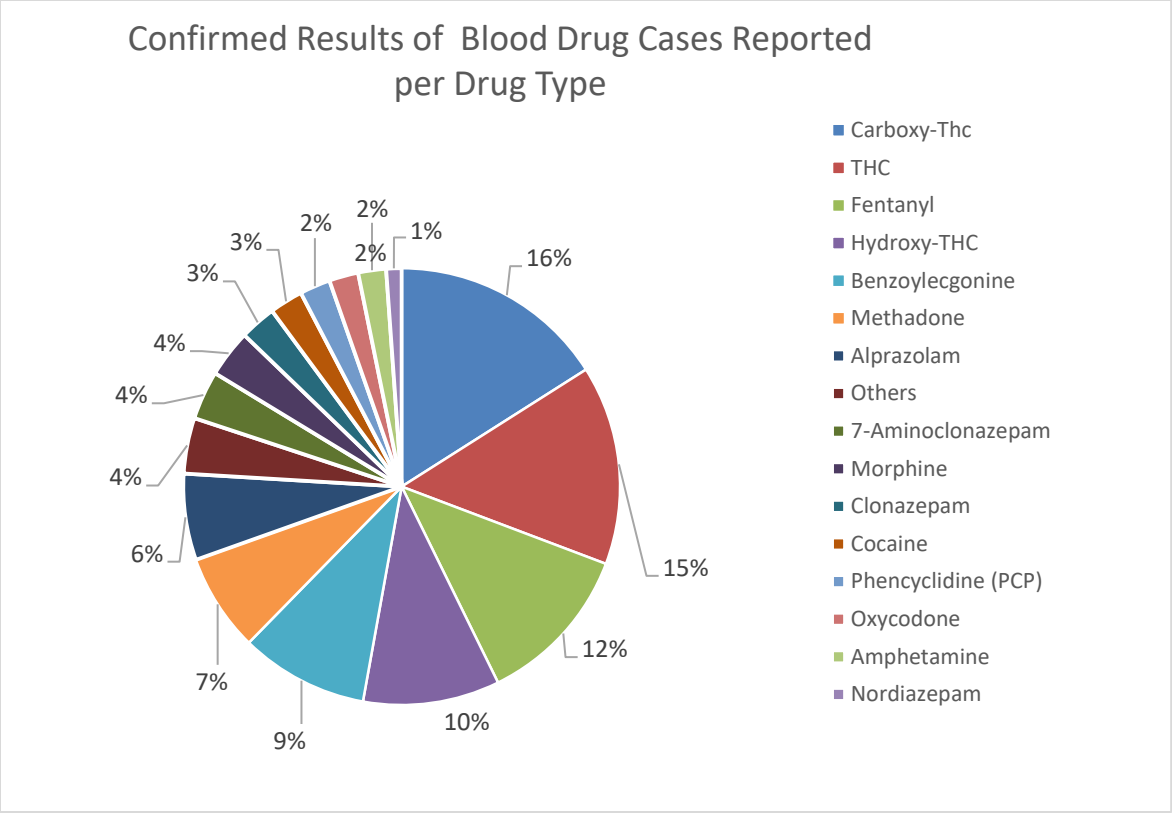

Blood Alcohol Pending Caseload and Backlog per Quarter
2018 Pending Caseload
2018 Backlog
2019 Pending Caseload
2019 Backlog
Cases
Quarter
End of 1st Qtr
End of 2nd Qtr
End of 3rd Qtr
End of 4th Qtr
81
0
88
0
37
0
75
4
51
5
171
111
32
17
108
50


Blood Drug Pending Caseload and Backlog per Quarter
2018 Pending Caseload
2018 Backlog
2019 Pending Caseload
2019 Backlog
Cases
400
350
300
250
200
150
100
50
0
47
33
246
175
73
48
247
174
59
8
249
213
147
80
349
287
End of 1st Qtr
End of 2nd Qtr
End of 3rd Qtr
End of 4th Qtr
Quarter


Toxicology Case Turn Around Time
2018 Alcohol
2018 Drugs
2019 Alcohol
2019 Drugs
Days
140
120
100
80
60
40
20
0
23
106
25
62
31
83
28
118
23
59
59
131
26
53
83
114
1st Qtr
2nd Qtr
3rd Qtr
4th Qtr
Quarter


Blood Alcohol Cases Reported per Detection Level
2%
2%
7%
46%
43%
Detected Over Legal Limit
None Detected
Detected Under Legal Limit
Detected at Legal Limit
Unacceptable Specimen


Blood Drug Cases Reported per Result Type
6%
7%
87%
Confirmed Positive
None Detected
Screened Postive/Failed to Confirm


Confirmed Results of Blood Drug Cases Reported per Drug Type
16%
15%
12%
10%
9%
7%
6%
4%
4%
4%
3%
3%
2%
2%
2%
1%
Carboxy-Thc
THC
Fentanyl
Hydroxy-THC
Benzoylecgonine
Methadone
Alprazolam
Others
7-Aminoclonazepam
Morphine
Clonazepam
Cocaine
Phencyclidine (PCP)
Oxycodone
Amphetamine
Nordiazepam

NOTEWORTHY CASES

In January 2019, the Carroll County Sheriff's Office responded to a life threatening injury vehicular crash for an investigation of a driver under the influence of possible drugs and/or alcohol. After a search of the vehicle, tablets, pills and capsules were found and submitted to MSP-FSD for analysis. The blood specimen from the driver of the vehicle was also submitted to MSP-FSD for Toxicology analysis. The CDS Unit's results identified a CDS prescription antidepressant medication and an anti-inflammatory drug from the evidence submitted, and the Toxicology Unit had a positive blood drug result from the specimen tested. Due to the MSP-FSD's reported results, the driver of the vehicle was charged with second-degree assault as a result of negligent driving while impaired by drugs.

In September 2019, a former Montgomery County High School volunteer coach was charged with multiple counts of possession of child pornography stemming from various computer data devices seized during a drug investigation. The original drug investigation started in 2017, in which the MSP-FSD Chemistry Manager analyzed over 60 pieces of drug evidence. The results from this evidence helped both CED and Homeland Security Investigations obtain a search and seizure warrant where more drug evidence and several hard drives were confiscated. Child pornography was discovered on the electronic evidence during the digital forensic investigation, leading to the final arrest and conviction of this individual.

BIOLOGY SECTION

The Biology Section is responsible for performing Serological and DNA analyses associated with criminal casework as well as maintaining and operating the State's DNA Database, the Combined DNA Index System (CODIS). In order to efficiently address these functions, the Biology Section is structured on a four-unit basis overseen by one Forensic Scientist Manager.

There are two casework units: the Investigative Casework Unit and the Trial Casework Unit. The Investigative Casework Unit is staffed by five individuals: three scientists, including one Forensic Scientist Supervisor, one Forensic Scientist Advanced, and one Forensic Scientist II. The fourth position is a Forensic Inventory Control Officer. The fifth position of a Forensic Scientist I is currently vacant. The Trial Casework Unit is staffed by five scientists, including one Forensic Scientist Supervisor, one Forensic Scientist Advanced, one Forensic Scientist III, and two Forensic Scientist II's.

The Database Unit is staffed by eight scientists, including one Forensic Scientist Supervisor (CODIS Administrator), two Forensic Scientists Advanced, and four Forensic Scientist III's, and one vacant Forensic Scientist I.

The Technical/Validation Unit is staffed by five individuals: four scientists including one Forensic Scientist Supervisor (Technical Leader), one Forensic Scientist Advanced, and two Forensic Scientist III's. The fifth position is a Forensic Laboratory Technician I.

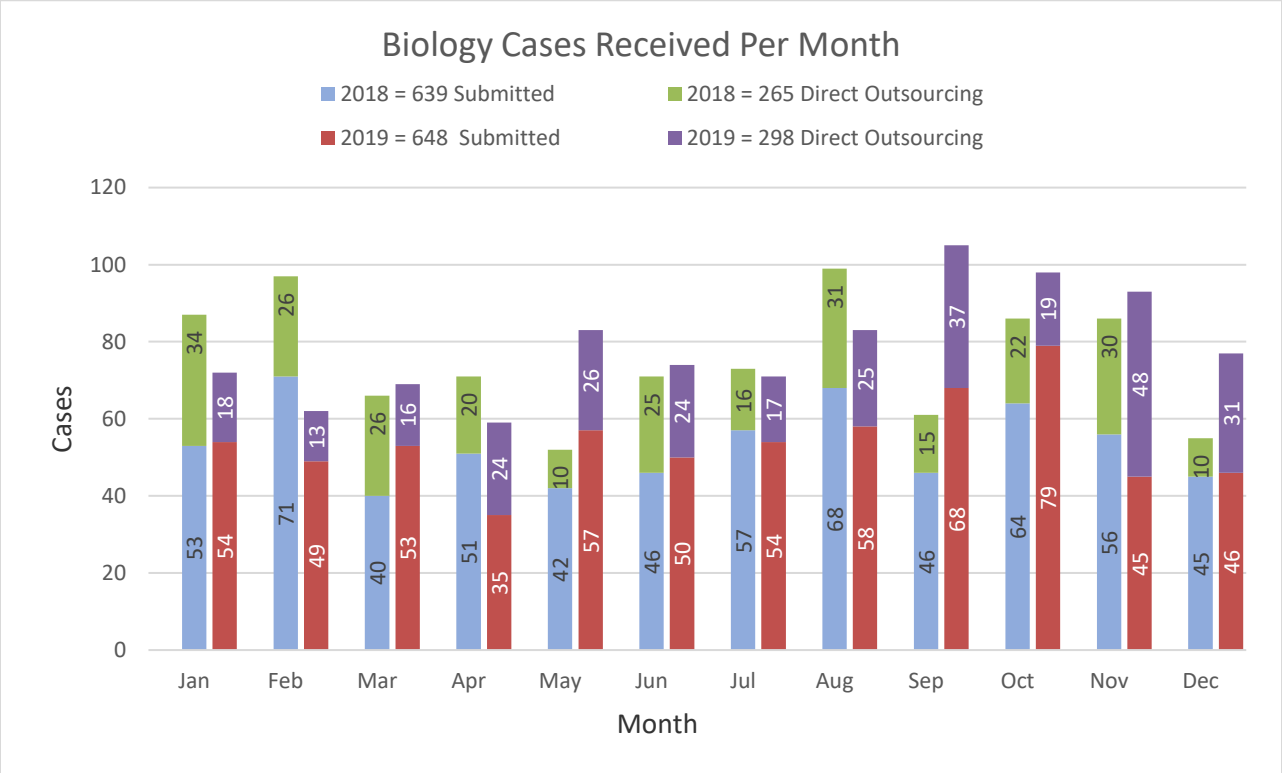
BIOLOGY CASEWORK UNITS

The Trial Casework Unit performs serology and/or DNA testing on cases that have resulted in an arrest and are being tested in support of the adjudication of the arrestee. While the primary responsibility of this unit is cases with pending trial dates, it also assists with the analysis of investigative and cold cases, the preparation and review of outsourced casework, and training of new analysts as necessary.

The Investigative Casework Unit performs serology and/or DNA testing on cases without pending court dates, which have not resulted in an arrest but are being tested in support of making an arrest. This unit is responsible for handling high-priority/high-profile investigative cases, routine investigative cases, and cold cases. The Investigative Casework Unit is also responsible for the management and processing of outsourced casework to the contract vendor laboratory and training of new analysts, as necessary.

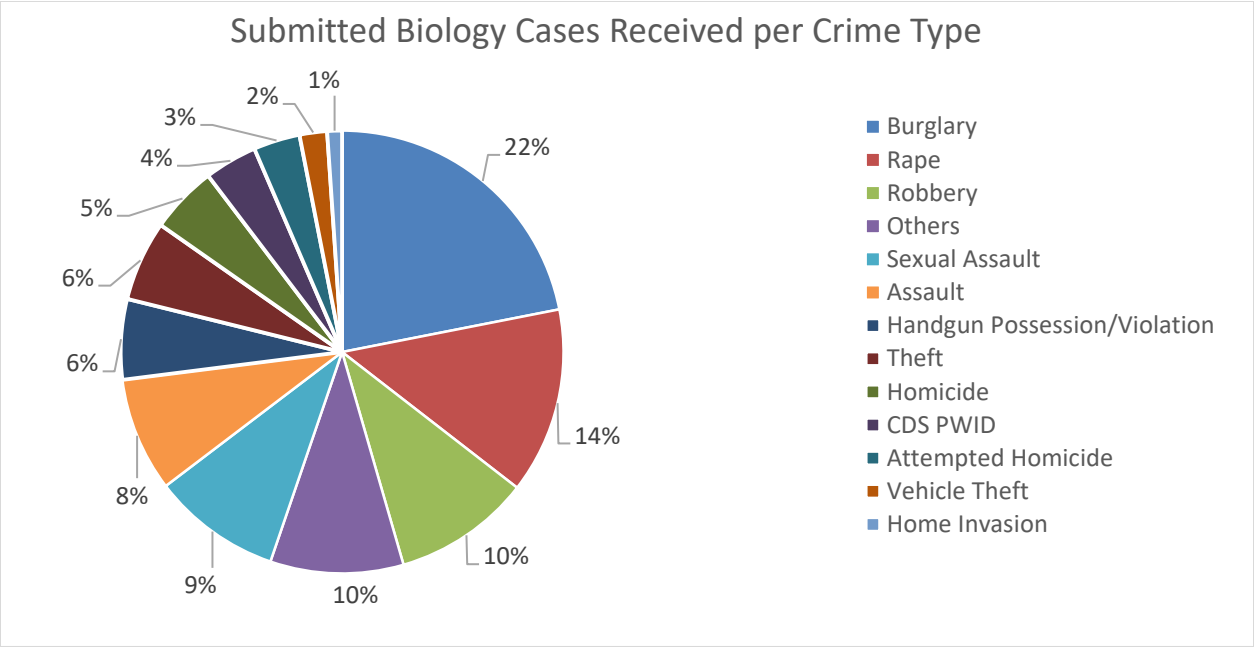
The overall amount of case submissions to the Biology Section remained around the same in 2019. There were 648 cases received in the Biology Section, which is only a 1.4% increase from 2018. There was an 11% increase in the number of cases that were directly outsourced in 2019. Even though these cases were directly outsourced from the investigating agency to the contract lab, they were still monitored and tracked by Biology Section staff. Upon completion of all outsourced cases, the data is reviewed and suitable profiles are uploaded to the CODIS database. When considering both in-house cases and directly outsourced cases, the total number of cases

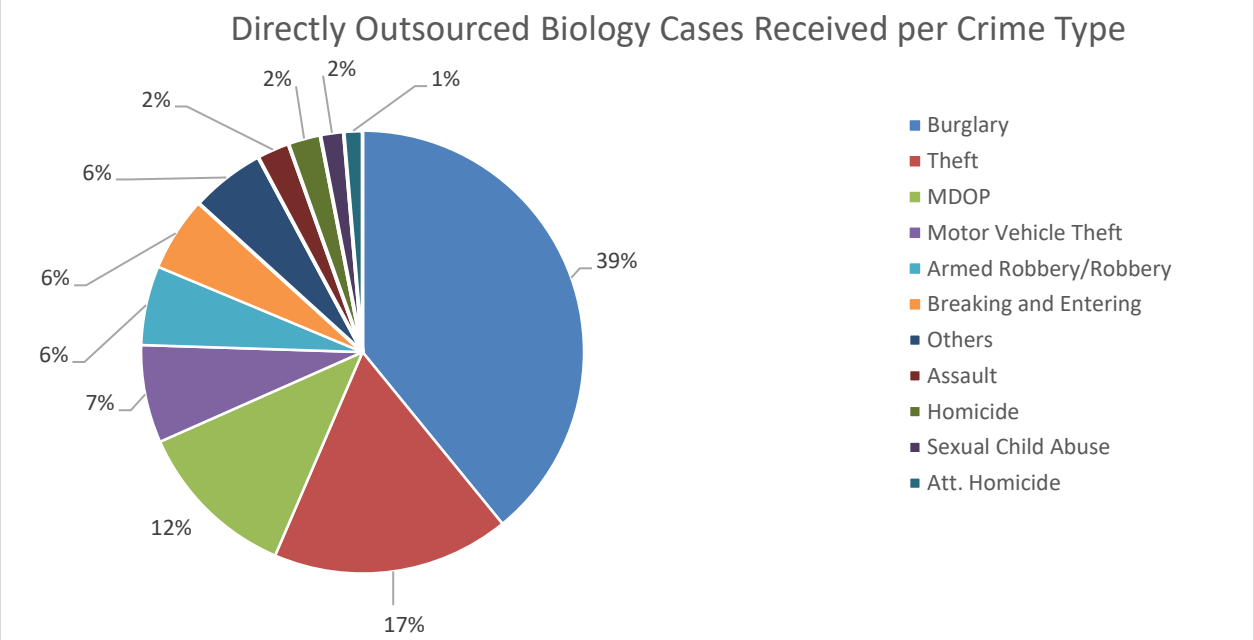
completed within the Biology Section decreased by 1.6% in 2019. By utilizing a combination of direct outsourcing, in-house outsourcing (evidence is received at MSP-FSD and then either the entire case or a portion of it is forwarded to a contracted laboratory for analysis), and in-house casework, the casework units have been able to continue to monitor and maintain the backlog at manageable levels.

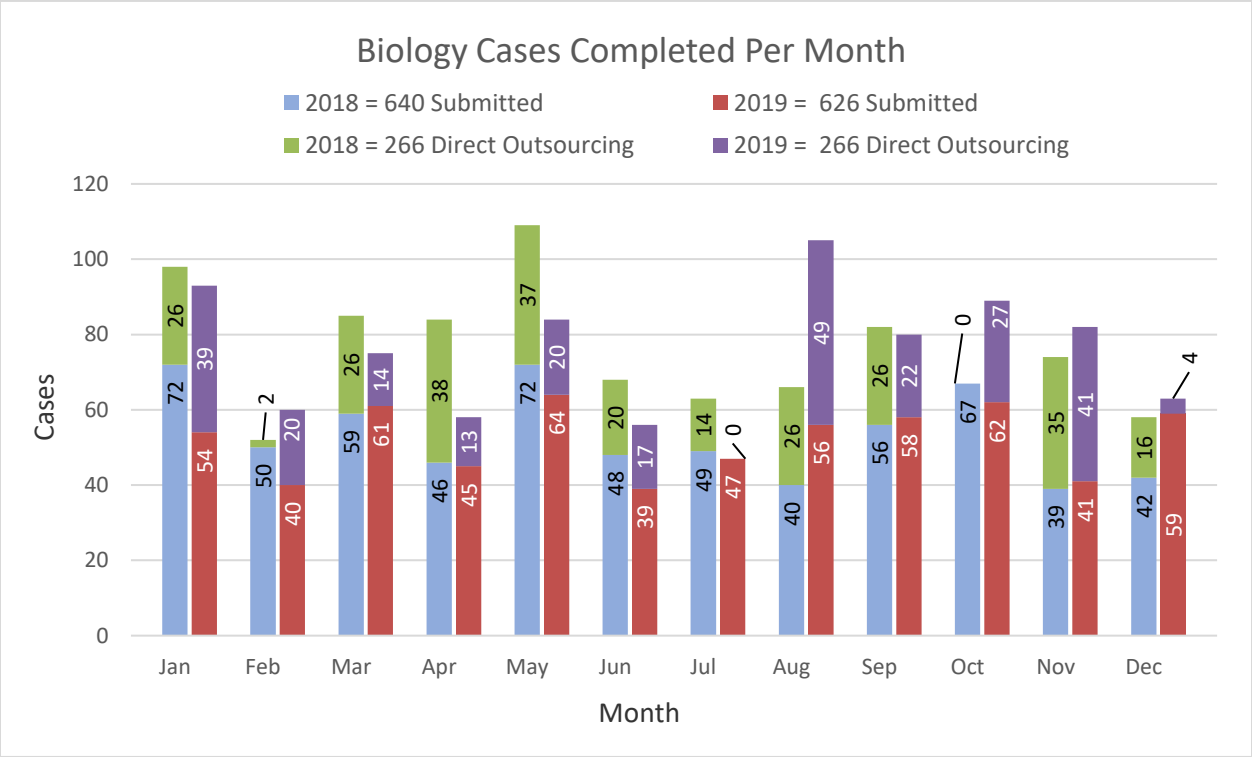


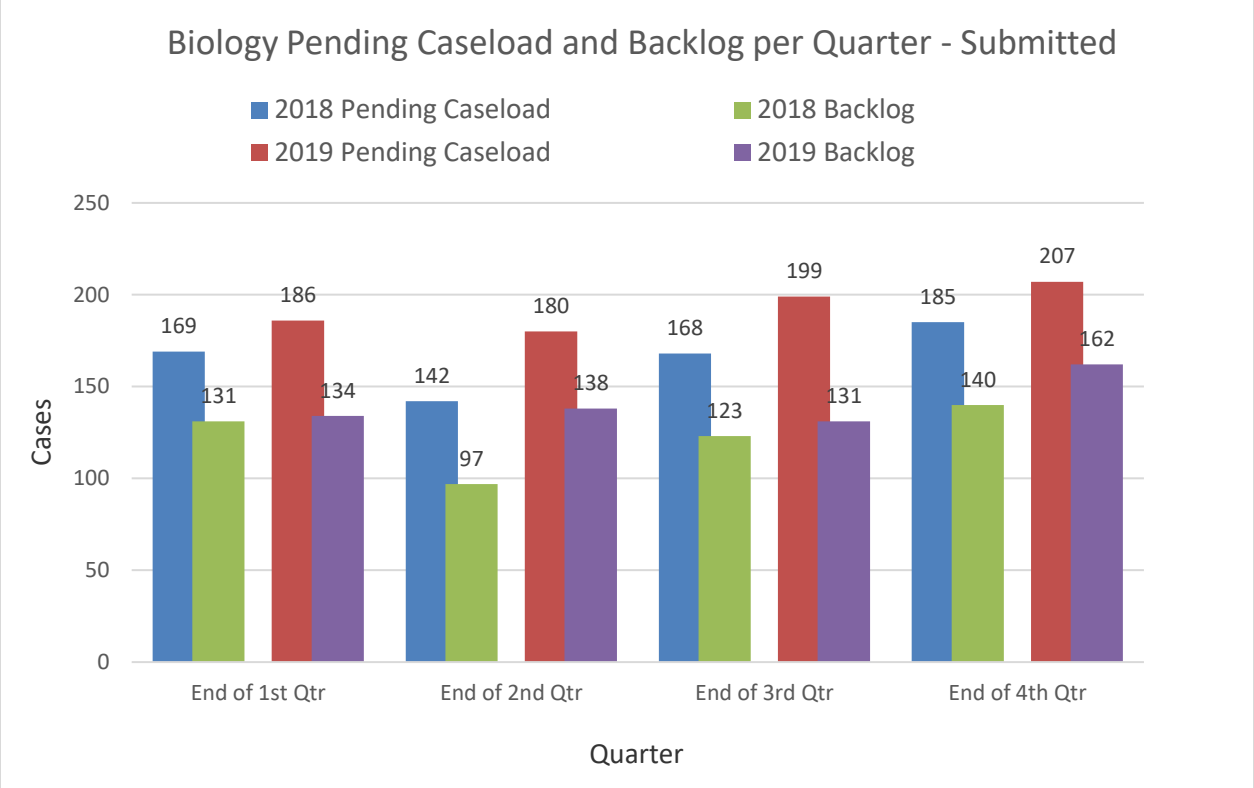
Biology Cases Received per MSP Installation				
MSP Installation	**Counties Served**	**Case Type**		
		Submitted	Directly Outsourced	Combined
MSP-CID/CED	Statewide	48	2	50
MSP-DED/C3I	Statewide	15	2	17
MSP-Princess Anne	Somerset	13	0	13
MSP-North East	Cecil	12	0	12
MSP-Homicide	Statewide	10	0	10
MSP-Salisbury	Wicomico	9	0	9
MSP-Easton	Caroline, Dorchester, Talbot	6	1	7
MSP-Leonardtown	St. Mary's	6	0	6
MSP-Westminster	Carroll	4	1	5
MSP-Berlin	Worcester	5	0	5
MSP-Golden Ring	Baltimore	4	0	4
MSP-Centerville	Kent, Queen Anne's	4	0	4
MSP-Frederick	Frederick	3	0	3
MSP-Bel Air	Harford	3	0	3
MSP-Hagerstown	Washington	3	0	3
MSP-McHenry	Garrett	3	0	3
OSFM	Statewide	3	0	3
MSP-Glen Burnie	Anne Arundel	2	0	2
MSP-JFK Hwy	Cecil, Harford, Baltimore	2	0	2
MSP-Prince Frederick	Calvert	2	0	2
MSP-LaPlata	Charles	1	0	1
MSP-Forestville	Prince George's	1	0	1
MSP-College Park	Prince George's	1	0	1
	TOTAL	**160**	**6**	**166**

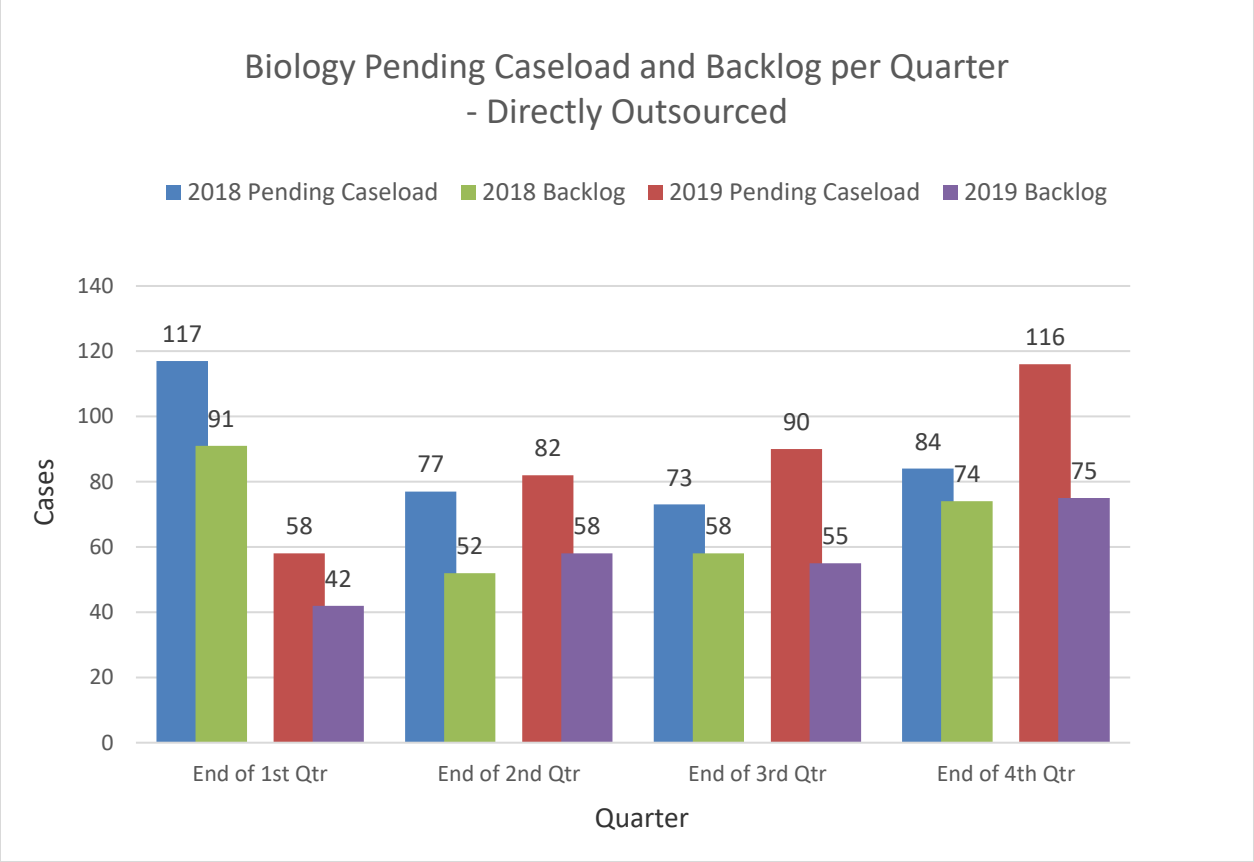
Allied Agency Cases Received by Biology per County			
County	**Case Type**		
	Submitted	Directly Outsourced	Combined
Charles	74	112	186
St. Mary's	24	87	111
Frederick	58	37	95
Wicomico	54	1	55
Harford	43	2	45
Cecil	42	2	44
Washington	26	14	40
Anne Arundel	27	8	35
Worcester	12	20	32
Prince George's	25	3	28
Carroll	23	2	25
Dorchester	18	1	19
Calvert	15	0	15
Talbot	11	2	13
Queen Anne's	10	1	11
Baltimore City	7	0	7
Garrett	5	0	5
Somerset	5	0	5
Caroline	4	0	4
Kent	2	0	2
Baltimore	1	0	1
Allegany	1	0	1
Howard	1	0	1
TOTAL	**488**	**292**	**780**

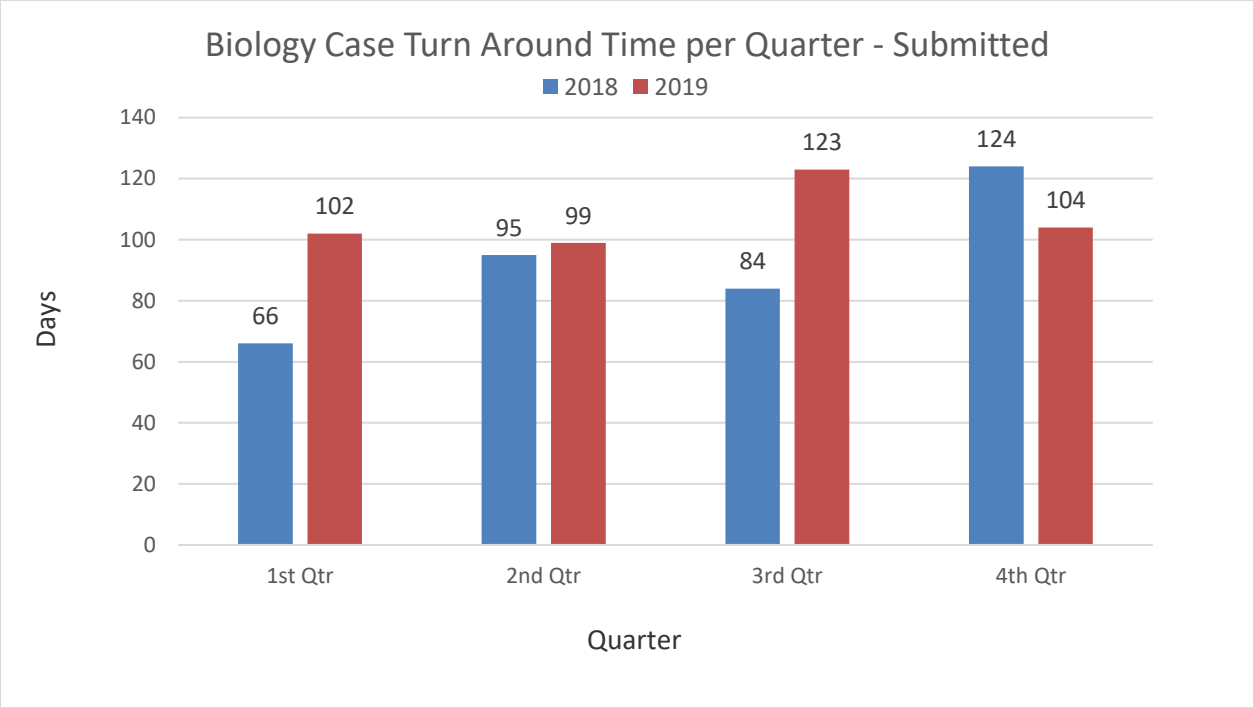

Submitted Biology Cases Received per Crime Type
22%
14%
10%
10%
9%
8%
6%
6%
5%
4%
3%
2%
1%
Burglary
Rape
Robbery
Others
Sexual Assault
Assault
Handgun Possession/Violation
Theft
Homicide
CDS PWID
Attempted Homicide
Vehicle Theft
Home Invasion

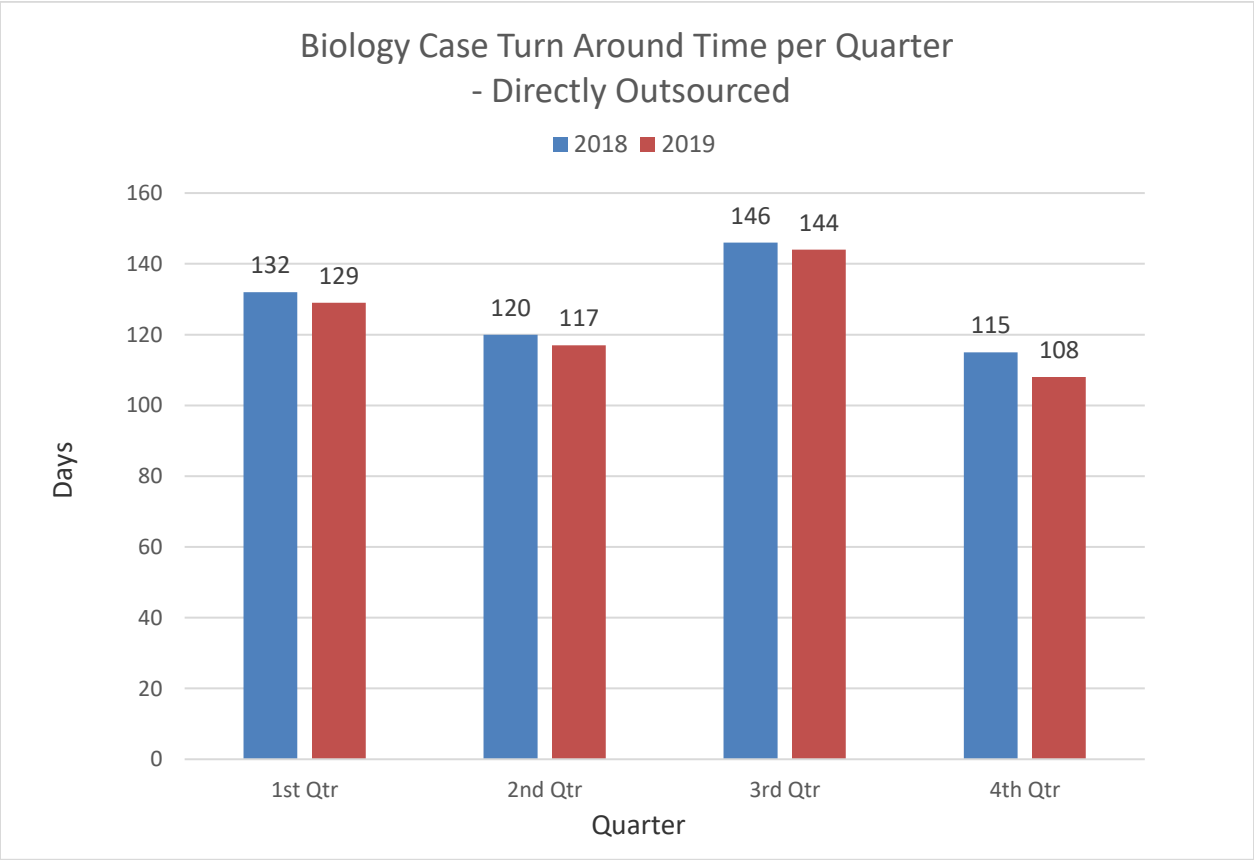

Directly Outsourced Biology Cases Received per Crime Type
39%
17%
12%
7%
6%
6%
6%
2%
2%
2%
1%
Burglary
Theft
MDOP
Motor Vehicle Theft
Armed Robbery/Robbery
Breaking and Entering
Others
Assault
Homicide
Sexual Child Abuse
Att. Homicide


Biology Cases Completed Per Month
2018 = 640 Submitted
2019 = 626 Submitted
2018 = 266 Direct Outsourcing
2019 = 266 Direct Outsourcing
Cases
120
100
80
60
40
20
0
Jan 72 54 26 39
Feb 50 40 2 20
Mar 59 61 26 14
Apr 46 45 38 13
May 72 64 37 20
Jun 48 39 20 17
Jul 49 47 14 0
Aug 40 56 26 49
Sep 56 58 26 22
Oct 67 62 0 27
Nov 39 41 35 41
Dec 42 59 16 4
Month


Biology Pending Caseload and Backlog per Quarter - Submitted
2018 Pending Caseload
2018 Backlog
2019 Pending Caseload
2019 Backlog
250
200
150
100
50
0
Cases
169
131
186
134
142
97
180
138
168
123
199
131
185
140
207
162
End of 1st Qtr
End of 2nd Qtr
End of 3rd Qtr
End of 4th Qtr
Quarter


Biology Pending Caseload and Backlog per Quarter
- Directly Outsourced
2018 Pending Caseload
2018 Backlog
2019 Pending Caseload
2019 Backlog
140
120
100
80
60
40
20
0
Cases
117
91
58
42
77
52
82
58
73
58
90
55
84
74
116
75
End of 1st Qtr
End of 2nd Qtr
End of 3rd Qtr
End of 4th Qtr
Quarter

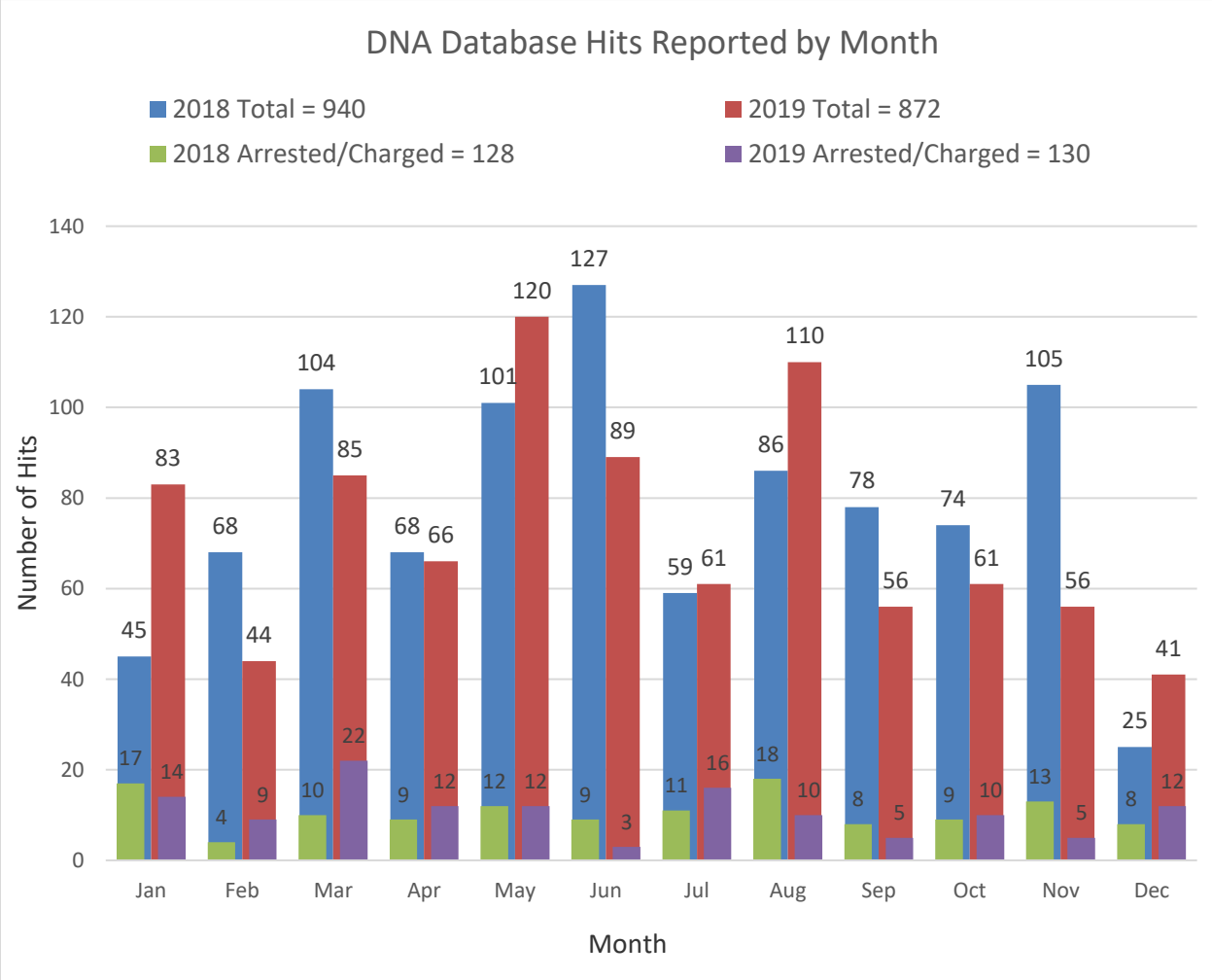

Biology Case Turn Around Time per Quarter - Submitted
2018
2019
Days
140
120
100
80
60
40
20
0
66
102
95
99
84
123
124
104
1st Qtr
2nd Qtr
3rd Qtr
4th Qtr
Quarter


Biology Case Turn Around Time per Quarter
- Directly Outsourced
2018
2019
Days
160
140
120
100
80
60
40
20
0
132
129
120
117
146
144
115
108
1st Qtr
2nd Qtr
3rd Qtr
4th Qtr
Quarter

BIOLOGY DATABASE UNIT

The Biology Database Unit is responsible for collecting DNA Database samples from individuals required under Maryland law to provide a sample. The law was expanded in 2009 to include individuals arrested and charged with crimes of violence, burglary, and attempts of these crimes. While the majority of samples are collected by Allied Agencies, the Biology Database Unit is responsible for ensuring that all samples that were collected are received. The Biology Database Unit is also responsible for processing the DNA database samples received (as per Maryland law), entering DNA profiles from DNA database samples into the database, searching the database for hits, and reporting database hits. The Biology Database Unit also oversees the entry of DNA profiles from casework evidence into the database.

In April 2019 the Maryland DNA Database released its 7000th hit. This hit was connected to an open 2003 rape case still under investigation.

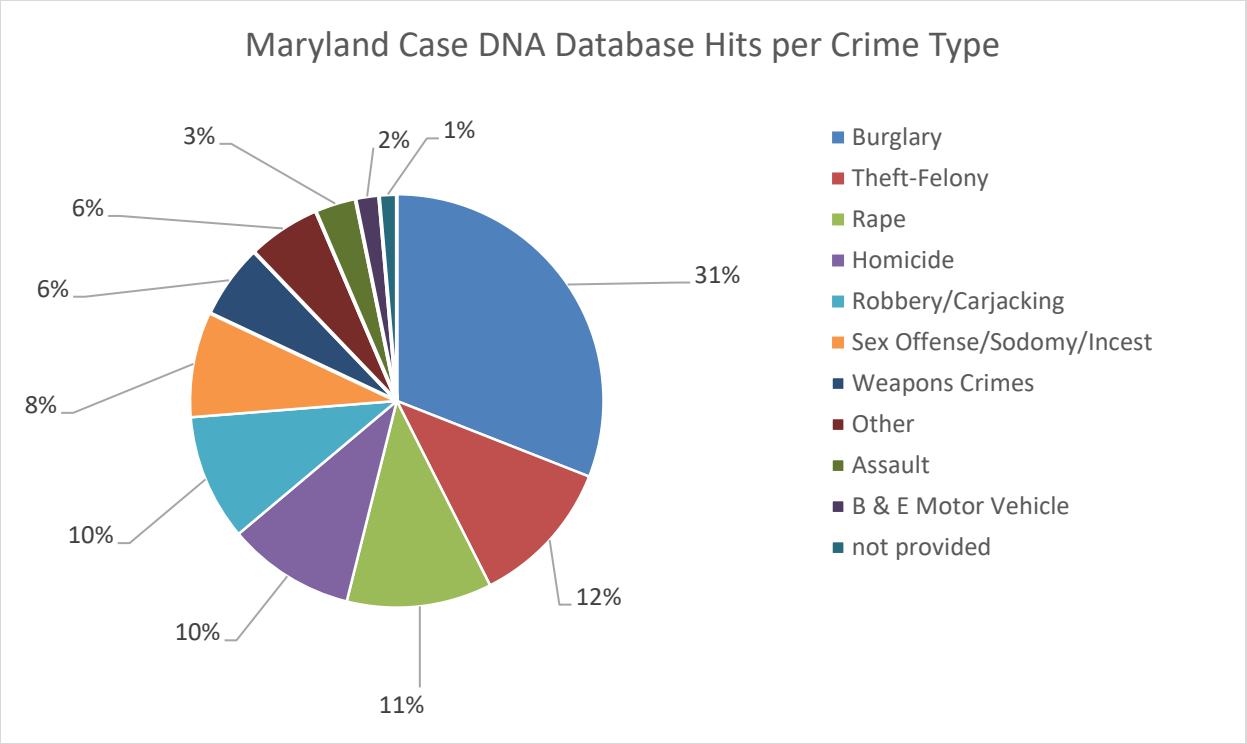


Maryland Case DNA Database Hits	
	Hits
Hits to Offenders/Arrestees (MD or National)	354
Hits to Cases (MD or National)	518
Total	**872**

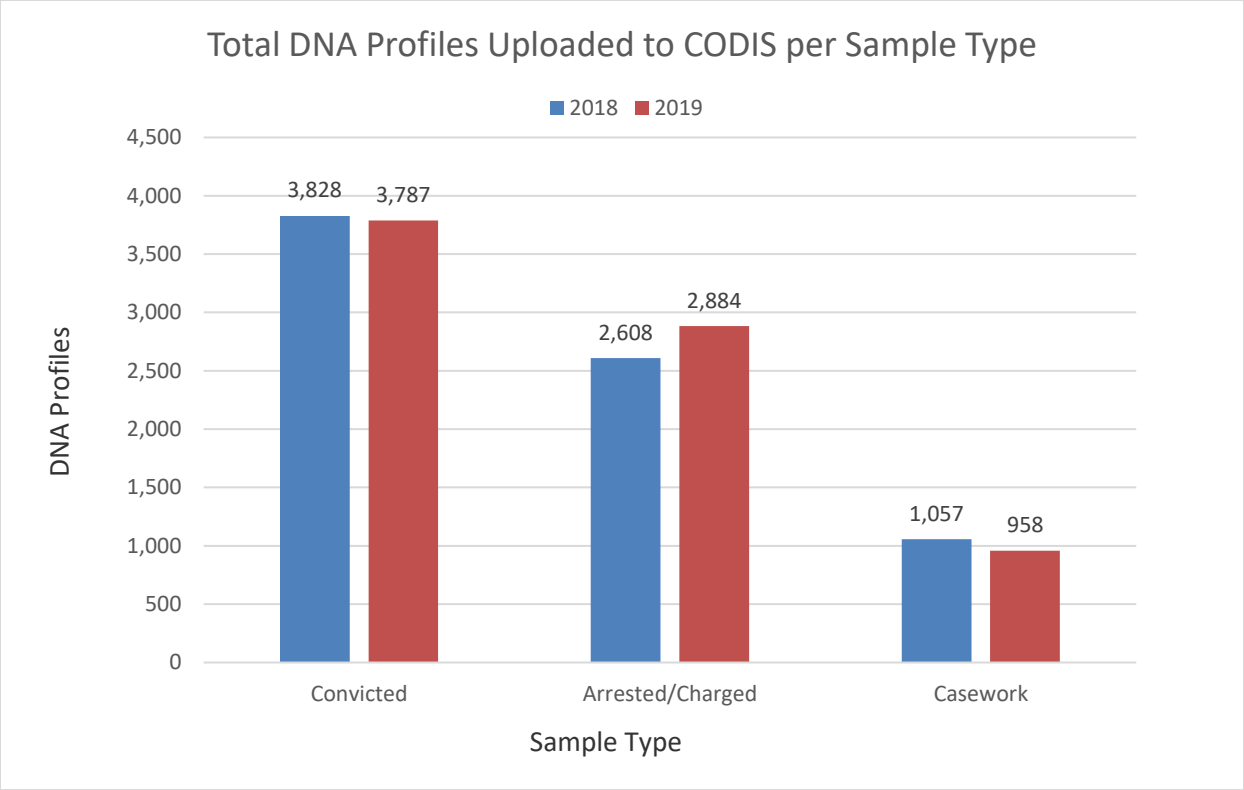
Note: Maryland case hits include a Maryland case hitting to a Maryland offender/arrestee, a Maryland case hitting a National offender/arrestee, a Maryland case hitting a Maryland case, and a Maryland case hitting a National case. A Maryland case hitting a Maryland case is considered as two Maryland case hits (this is not consistent with how hits are reported for the National DNA Index System (NDIS)). A Maryland case hitting to a Maryland offender/arrestee is counted as both a Maryland offender/arrestee hit and a Maryland case hit.

Maryland Case DNA Database Hits by County	
County	**Hits**
Baltimore City	263
Montgomery	135
Anne Arundel	134
Prince George's	88
Charles	39
Baltimore	32
Frederick	31
St. Mary's	23
Howard	18
Wicomico	15
Allegany	12
Cecil	12
Harford	12
Washington	11
Somerset	9
Worchester	8
Dorchester	7
Carroll	6
Queen Anne's	4
Talbot	4
Calvert	3
Caroline	3
Garrett	3
TOTAL	**872**

Maryland DNA Database Case Hits by Crime Year	
Crime Year	**Hits**
1988	1
1992	2
1993	3
1994	3
1997	2
1998	3
1999	1
2000	4
2001	4
2002	6
2003	5
2004	8
2005	9
2006	4
2007	11
2008	18
2009	13
2010	21
2011	19
2012	20
2013	21
2014	27
2015	41
2016	59
2017	118
2018	259
2019	153
Unknown	37
Total	**872**



Maryland Offender/Arrestee DNA Database Hits per Crime Jurisdiction	
Jurisdiction	**Number of Hits**
Maryland	285
District of Columbia (Metro PD)	30
Virginia	16
FBI	8
Pennsylvania	6
New York	6
Florida	5
Delaware	3
West Virginia	2
ATF	2
Ohio	2
Texas	2
Arizona	1
Colorado	1
Georgia	1
New Jersey	1
South Carolina	1
Tennessee	1
Total	**373**



BIOLOGY TECHNICAL UNIT

The Technical Unit of the Biology Section is responsible for the evaluation of new technologies to determine if they are appropriate to implement into the Section, validation of new technologies, training of personnel on new and current technologies, and quality assurance / quality control aspects of the Biology Section.

In 2019, the Technical Unit:

- completed the Standard Operating Procedures manual for the Hamilton Starlet to replace the current high-throughput instruments for Database,
- completed the transition of the Y-STR statistical searches from USYSTR.org to YHRD.org,
- worked with the Casework Unit to complete the serology training of three new analysts and begin their DNA analysis training,
- assisted with a student research project investigating the possibility of recovering DNA of gun owner and gun loader on internal areas of gun after firing,
- evaluated several different probabilistic genotyping software systems to select the most appropriate for future use by the Section, and
- passed the Section's fourth external FBI Quality Assurance Standards Audit in a row with zero non-conformances, along with all Units of the Biology Section.

NOTEWORTHY CASES

In May 2019, a Washington County man was convicted and sentenced for sexually assaulting a 10-year-old boy. A FSIII from the Biology Section worked on this case, and the DNA results showed the suspect's DNA on the child's genitalia swabs, scrotum swabs and swabs from inside of the front area of the child's underwear, which led to the suspect's arrest and conviction.

In August 2019, a Frederick man was sentenced after pleading guilty to a third-degree sex offense from 2018. The sexual assault kit from this incident was sent to MSP-FSD, and in October 2018 a DNA profile from the kit was entered into CODIS. The DNA profile hit to a convicted offender DNA sample collected from the perpetrator for a 2002 robbery in Greensboro, NC.

In September 2019, a routine search of the State of Maryland DNA Database resulted in a match between a Maryland convicted offender and evidence related to a 2019 Anne Arundel County PD burglary case. The case evidence, blood from a coffee shop in southern Anne Arundel County, helped to identify an individual that was involved in a string of over 50 commercial burglaries spanning multiple Maryland counties allowing investigators to solve these 50 cases.

TRACE EVIDENCE SECTION

The Trace Evidence Section (TES) consists of two units, the Trace Evidence Unit and the Questioned Documents Unit. The Trace Evidence Unit is sub-divided into three sub-units, Trace Pattern, Trace Chemistry and Trace Biology. The Trace Evidence Section consists of one Forensic Scientist Supervisor, one Forensic Scientist Advanced and three Forensic Scientist III's.

The TES works closely with our allied agencies so that the various types of examinations included in this discipline are available to the citizens of Maryland. The TES relies on a former trace examiner from an Allied Agency to technically review casework in which MSP-FSD only has one qualified examiner. Forensic Scientists from the TES are also reviewing casework from Baltimore City when needed. Since the Baltimore City Trace Lab performs only fire debris analysis and the Baltimore County Laboratory no longer offers Trace Evidence services, the MSP-FSD is expected to absorb cases from those jurisdictions, when possible. TES has obtained some equipment from the former Baltimore County Trace Lab and is in the process of validating this instrumentation for casework. As of early 2018, no public forensic laboratory in Maryland is currently conducting glass analysis. Some of the donated instrumentation will be used to restart glass analysis in our laboratory.

TRACE EVIDENCE UNIT

The Trace Pattern Sub-Unit performs analyses on evidence that either contains or produces a unique pattern that provides beneficial information to the investigators of the case. These analyses include Fracture Matches, Lamp Examinations and Plastic Bag comparisons.

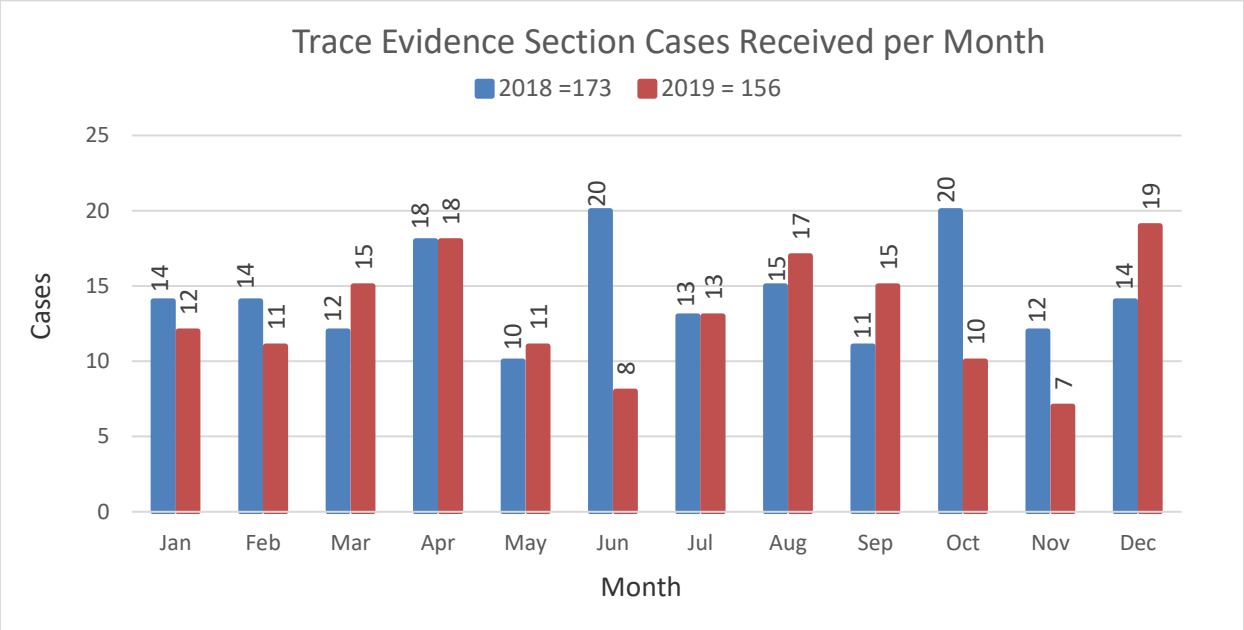
The Trace Chemistry Sub-Unit receives the bulk of the Trace Evidence Section case requests and is responsible for the analyses of any evidence that requires chemical or instrumental testing to determine physical and chemical properties. These include analyses in the areas of Fire Debris, Paint, Bank Dye Packs, Fibers, Tapes and Adhesives, Soil Anomalies, Cordage, Knots and Ligatures and miscellaneous liquids, powders and solids.

The Trace Biology Sub-Unit examines biological evidence in support of the operations of the Biology Section. The main area of analyses is the examination of hair to determine species (animal or human) and growth phase for further DNA profiling.

QUESTIONED DOCUMENTS UNIT

The Questioned Documents Unit performs analyses and comparisons of handwriting as well as hand-printed and machine-printed materials. This unit also performs examinations of obliterated and indented writing.

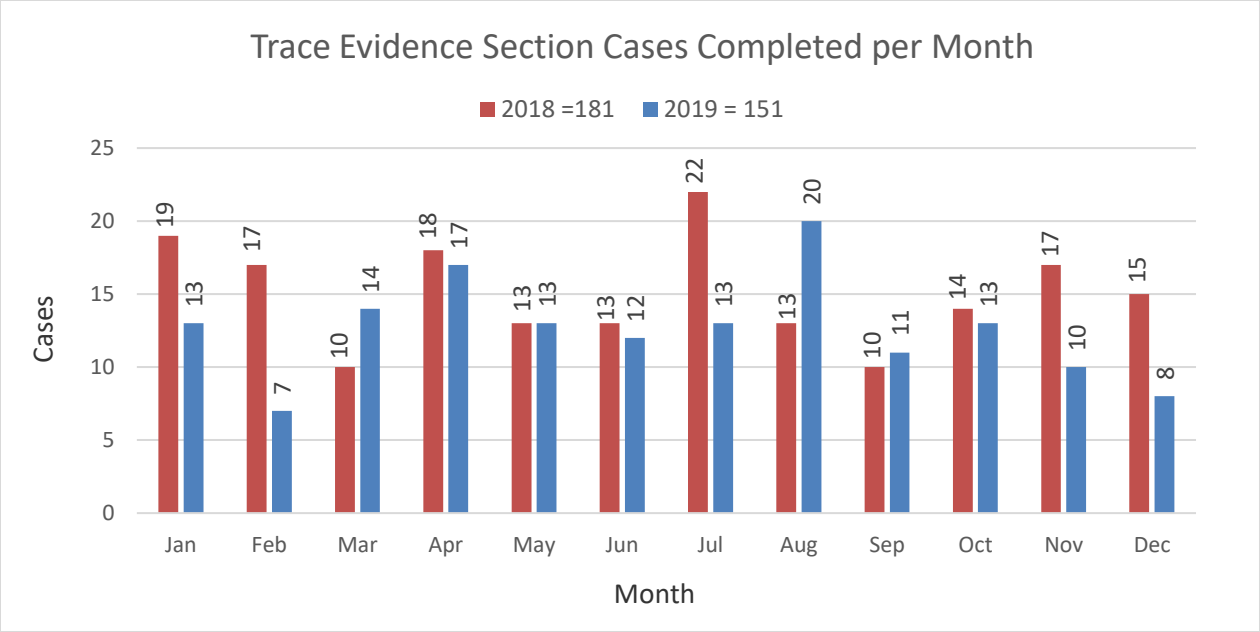
The MSP-FSD now has two Questioned Documents examiners since a second examiner has recently completed cross training in Questioned Document analysis. This second examiner will soon allow us to complete the case reviewing process more efficiently.

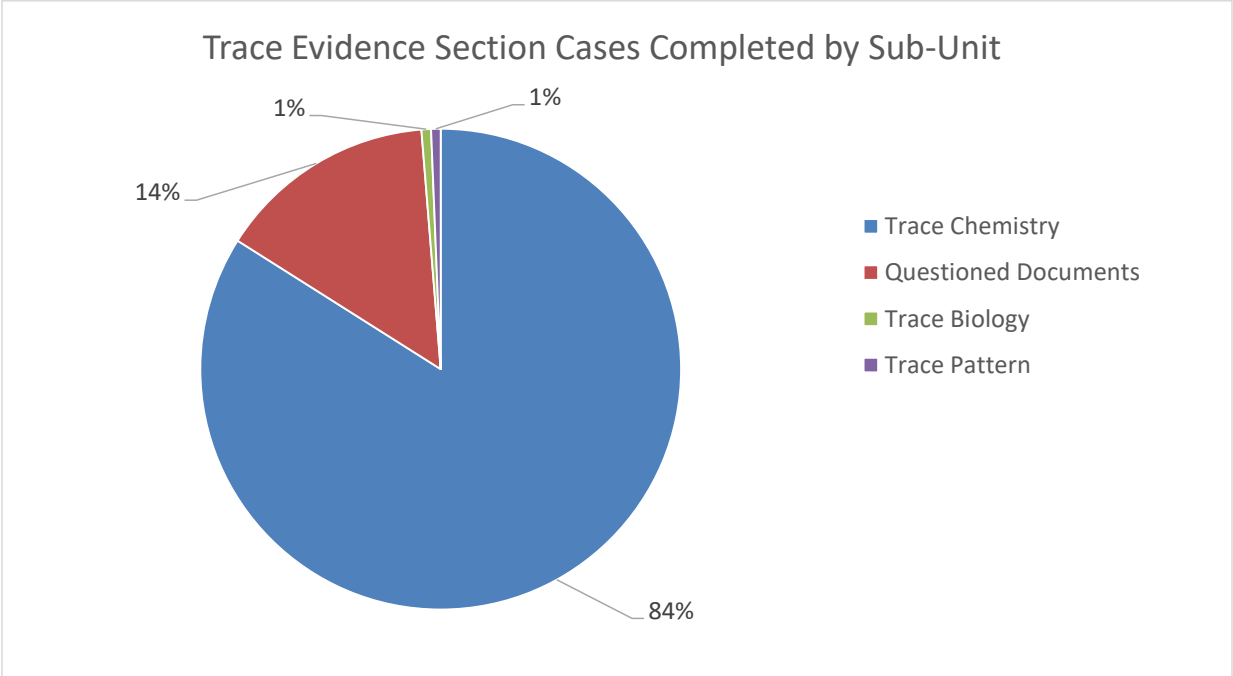


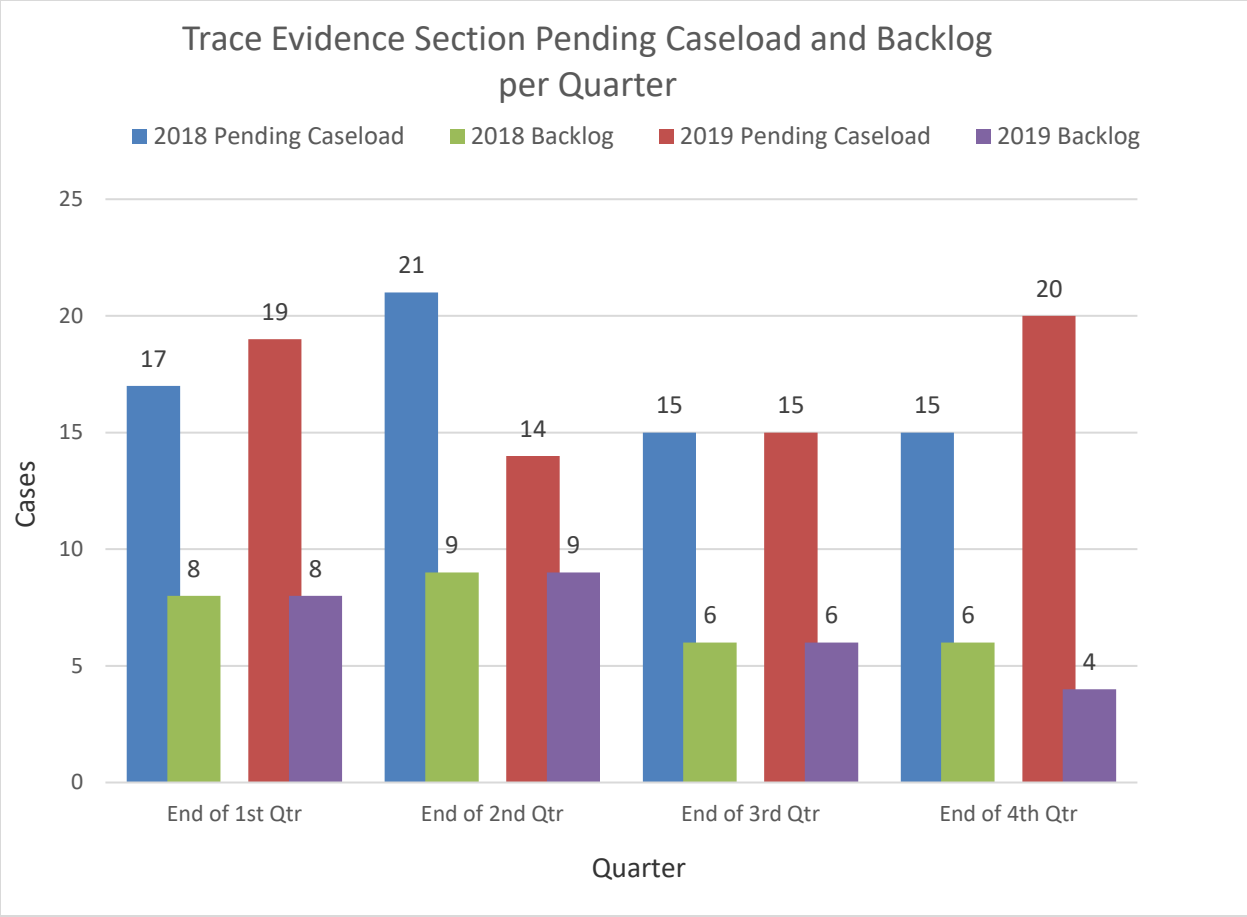
Trace Evidence Section Cases Received per MSP Installation		
Installation	**Counties Served**	**Submissions**
MSP-CID/CED	Statewide	3
MSP-Homicide	Statewide	3
MSP-Easton	Caroline, Dorchester, Talbot	1
MSP-Berlin	Worcester	1
MSP-Frederick	Frederick	1
MSP-Hagerstown	Washington	1
MSP-Glen Burnie	Anne Arundel	1
MSP-Crash Team	Statewide	1
	TOTAL	**12**

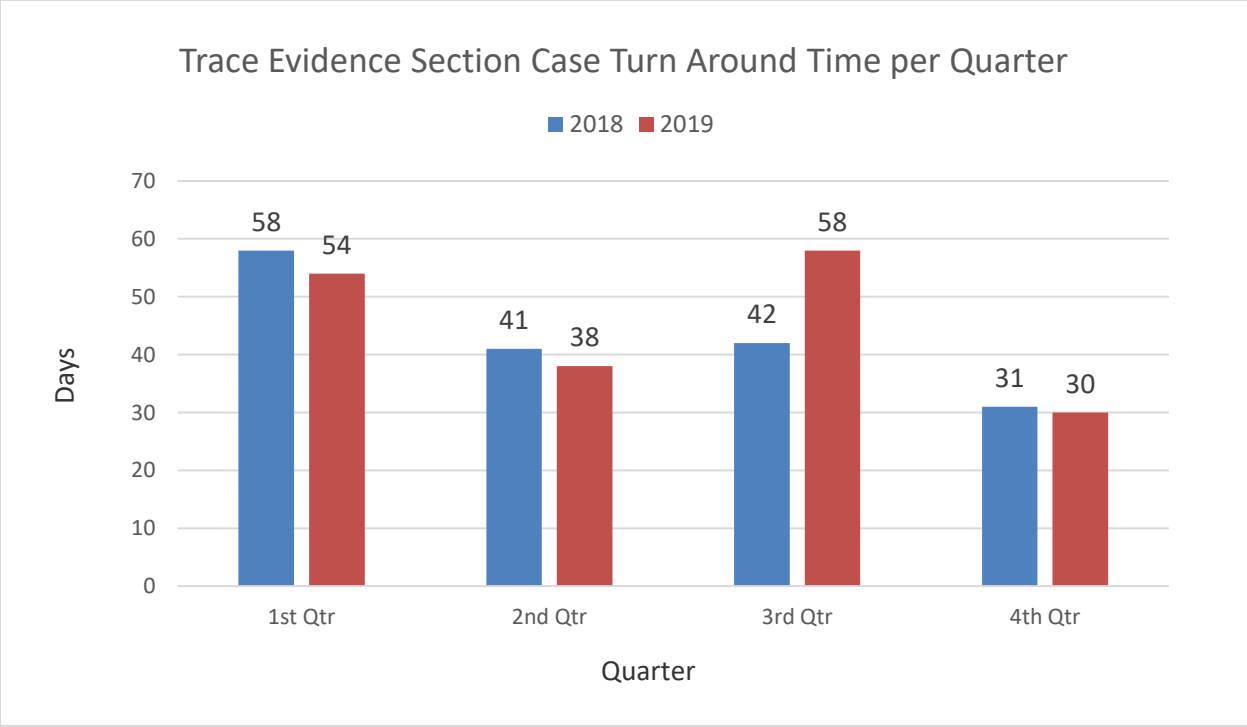
OSFM Cases Received by the Trace Evidence Section per OSFM Region		
Region	**Counties Served**	**Submissions**
OSFM - North East	Harford, Cecil	19
OSFM - Lower Shore	Dorchester, Somerset, Wicomico, Worcester	11
OSFM – Metro	Carroll, Howard, Frederick	9
OSFM - Upper Shore	Caroline, Kent, Queen Anne's, Talbot	5
OSFM - Southern	Calvert, Charles, St. Mary's	4
OSFM - Western	Allegany, Garrett, Washington	3
	TOTAL	**51**

Allied Agency Cases Received by TES per County	
County	**Submissions**
Anne Arundel	28
Baltimore	22
Montgomery	15
Howard	5
Talbot	4
Baltimore City	3
Frederick	3
Wicomico	3
Prince George's	2
Washington	2
Harford	1
Charles	1
Carroll	1
Kent	1
Worcester	1
Dorchester	1
TOTAL	**93**


Trace Evidence Section Cases Completed per Month
2018 =181
2019 = 151
Cases
Month
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
19
13
17
7
10
14
18
17
13
13
13
12
22
13
13
20
10
11
14
13
17
10
15
8


Trace Evidence Section Cases Completed by Sub-Unit
1%
1%
14%
84%
Trace Chemistry
Questioned Documents
Trace Biology
Trace Pattern


Trace Evidence Section Pending Caseload and Backlog per Quarter
2018 Pending Caseload
2018 Backlog
2019 Pending Caseload
2019 Backlog
Cases
25
20
15
10
5
0
17
8
19
8
21
9
14
9
15
6
15
6
15
6
20
4
End of 1st Qtr
End of 2nd Qtr
End of 3rd Qtr
End of 4th Qtr
Quarter


Trace Evidence Section Case Turn Around Time per Quarter
2018
2019
Days
70
60
50
40
30
20
10
0
58
54
41
38
42
58
31
30
1st Qtr
2nd Qtr
3rd Qtr
4th Qtr
Quarter

NOTEWORTHY CASES

On August 29, 2019 one of our Trace evidence examiners received a fire debris analysis case from an Anne Arundel County Fire Marshal. The evidence consisted of 6 items which were collected from a residence in Brooklyn Park, Anne Arundel County. A fire had been started in the basement while a woman and child were sleeping upstairs. The occupants were taken to the University of Maryland Medical Center by paramedics and were listed in stable condition. Surveillance footage led to the defendant who was in a child custody battle with the woman. Laboratory analysis detected gasoline in three of the six items. The defendant was charged with Attempted First Degree Murder, First and Second Degree Assault, Reckless Endangerment, First-degree Arson, Malicious Burning, Harassment, Malicious Destruction and violation of the terms of his prison release.

In 2019, a Washington DC man was found guilty of first- and second-degree murder for shooting and killing a Laurel man during a 2016 robbery gone awry. MSP-FSD's Questioned Documents examiner examined a notebook with handwriting that listed one of the witnesses as a "rat", and identified the suspect as the writer. The results of the handwriting examination showed that the suspect had written phone numbers next to the word "rat" in a notebook belonging to the witness.

The Questioned Document Unit also received a request in 2019 to examine signatures on 9 fraudulent checks totaling approximately $4,000. This case involved two separate police agencies (Cambridge PD and Talbot County Sheriff's Office) and multiple financial institutions. There was one suspect thought to be responsible for all of the checks. The suspect involved is incarcerated in a correctional institution on the Eastern Shore.

EMPLOYEE RECOGNITION

Special Appointments

Catherine Savage, Forensic Scientist Supervisor in CDS-Pikesville, continued to serve as the Chair of the Criminalistics Board for the Mid-Atlantic Association of Forensic Scientists (MAAFS) for 2019.

Diane Lawder, Forensic Scientist Advanced in Trace Evidence Section, served as President of MAAFS in 2019.

Jason Befus, Forensic Scientist Supervisor in the Biology Section, serves as Executive Secretary of the OSAC Biological Methods Subcommittee.

Bruce Heidebrecht, Forensic Scientist Supervisor in the Biology Section, is the Vice-Chair of the Scientific Working Group on DNA Analysis Methods, Autosomal STR Interpretation Committee.

Certification Achievements

MSP-FSD provided the resources for several MSP-FSD staff members to achieve certification by nationally/internationally recognized certification boards for forensic science specialties. In 2019, twenty-three MSP-FSD staff members became certified, and MSP-FSD now has approximately 33% of its staff fully certified. The following staff became Certified Property and Evidence Specialists: Administrative Officer III Cindy Hoffmann, FICO Shelly Adams, FICO Arnetta Haith, FICO Naomi McAuley, FICO Annie Wright, FICO Rebecca Roher and FICO Monyai Stukes. The following staff became certified by the American Board of Criminalistics: Director Daniel Katz, Deputy Director Wanda Kuperus, Quality Assurance Manager Theresa DeAngelo, Forensic Scientist III Kevin Beardsley and Forensic Scientist II Steven Hand. The following Crime Scene staff became certified by the International Association for Identification in Crime Scene Investigation: CST II Stephanie Anschuetz, CST II Megan Buck, CST II Patricia Frantz, CST II Jennifer Jeudy, CST II Angela Kortchak, CST Supervisor Melissa Harvey, CST II Linda Idso, CST II Jaimie Myer, CST II Kelly Sexton, CST II Samuel Woods and CST II Nikki Zack.

Promotions

Several MSP-FSD staff members were promoted in 2019. In March, Catherine Savage was promoted to become the new Supervisor of the Controlled Dangerous Substances-Pikesville Unit. In April, Melissa Harvey was promoted to become the new Crime Scene Technician Supervisor of the Eastern Region of the Crime Scene Section. In May, Jessie Campbell was promoted to the position of Forensic Scientist Advanced in the Firearms/Toolmarks Unit and took on the new role of NIBIN Coordinator. In October, Sara Lee was promoted to the position of Forensic Scientist Advanced in the DNA Database Unit of the Biology Section and is now the designated Alternate State CODIS Administrator for Maryland.

Quarterly Teamwork Awards

2019 Q1 – IAPE Certification

Striving to serve the customers of MSP-FSD better is what Forensic Inventory Control Officers (FICOs) do on a daily basis. So, when a grant was obtained for personnel to receive enhanced training leading to certification in their field of expertise, a team of eligible FICO's volunteered to participate. Administrative Officer III Cindy Hoffmann, FICO Arnetta Haith, FICO Naomi McAuley and FICO Annie Wright completed a 14 hour online training class that covered all aspects of evidence and property management. They had 2 hours to take the 50 question test at the completion of the training. All passed the test and received certificates as Certified Property and Evidence Specialists.

Congratulations to all of you for taking the time to participate, aspiring to learn more, and achieving your goal of certification!

2019 Q2 - SAEK Inventory

Recently, legislation based on recommendations from a state committee was implemented standardizing the storage, inventory and testing of Sexual Assault Evidence Kits (SAEK) in Maryland. In an effort to fund the testing of previously untested SAEK's, the State applied for and received a federal Sexual Assault Kit Initiative (SAKI) grant. In order for the grant funds to be released for testing, the State must first complete a thorough inventory of all untested SAEK's being held by law enforcement agencies throughout Maryland.

It was determined that all untested kits held by the Maryland State Police needed to be brought to MSP-FSD for an inventory to be conducted in May 2019. This effort was coordinated through the Office of the Attorney General (OAG) and a team of MSP staff from the Policy & Analysis Section, the Criminal Enforcement Division and the Forensic Sciences Division.

Biology Section Manager Argi Magers and Forensic Science Supervisors Michelle Groves, Jason Befus and Debbie Heller spearheaded the response from that section and helped answer countless questions from commanders and investigators about CODIS entries and other information about the kits. They updated numerous spreadsheets continuously.

Central Receiving Unit Supervisor Cindy Hoffmann and Forensic Inventory Control Officer Rebecca Roher were instrumental in ensuring the kits were brought to MSP-FSD within a time frame, ensured spreadsheets were updated daily, and that the correct evidence was being submitted and reports were being uploaded as required. Crime Scene Technicians were tasked in some cases with making extra trips to barracks to ensure the kits got to the lab in time for the inventory.

The inventory had been scheduled for several days but was completed within a few hours due to the organized and proactive steps that MSP-FSD staff took to make sure the information needed by the four OAG investigators was available. This could not have been done without the coordinated efforts of many MSP-FSD staff. There were 72 kits that were inventoried and the Assistant Attorney General in charge of this project said the inventory went exceptionally well.

2019 Q3 - Photography and Latent Prints Collaboration

A few years ago, MSP-FSD Top Management inquired whether the Photography Unit could assist with latent print photography in order to help streamline the operations of the Latent Print and Impressions Unit (LPIU). Photography Unit Supervisor Amy Hager and LPIU Supervisor Stephanie Roberg brainstormed for courses that would help achieve this goal. It was determined that higher level Photoshop instruction would be perfect.

The LPIU was able to obtain grant funding to host and attend both the Foray Intermediate Digital Imaging course and the Foray Advanced Digital Imaging course. David Witzke, a world renowned expert in the field of forensic digital imaging technologies, was the instructor for the classes - four LPIU staff members and two from the Photograpy Unit attended along with staff from other regional crime labs.

The classes concentrated on proper non-destructive methods of noise suppression and contrast improvement in images with complex substrates. Staff were taught advanced Photoshop techniques and features to utilize in the program and then given practical exercises. The methods taught follow published SWIGIT guidelines and have been accepted in court. After attending these courses the techniques and strategies learned can be applied to casework, particularly images with complex substrates, and used to improve the work product quality of both units. Taking the same training together ensured that both units are properly trained and working in the same manner to ensure consistency.

This collaboration shows outstanding teamwork by two MSP-FSD units working towards the MSP-FSD mission of meeting the forensic science needs of Maryland and its citizens; minimizing backlogs and turnaround times; and operating in a planned, prepared and proactive manner.

2019 Q4 - Former Employee Casework Compilation

In October 2019, it became necessary to review all of the cases that a former MSP-FSD forensic scientist worked in his 16 year career at MSP-FSD. The task was daunting - Central Receiving Unit Supervisor Cindy Hoffmann coordinated this massive project which had to be completed as quickly and accurately as possible.

The project started with pulling all cases done by the Firearms/Toolmarks Unit from 1991-2007 from the Hall of Records in Jessup and bringing them to the MSP-FSD. There were close to 11,000 total cases completed by the unit during that time period. Hoffmann and her team had to go through each case by hand to determine if the scientist worked on the case - he did in more than 4,000 cases. Each case then had to be reviewed to determine the county of origin and other pertinent information. This was put on spreadsheets and compiled for Director Katz to submit to the State's Attorney's Association.

The team working on this project consisted of Hoffmann, Forensic Inventory Control Officer Arnetta Haith, Crime Scene Technician (starting out as a FICO) Rebecca Roher, Falcon Solutions' Kelsey Herbert, Administrative Support staff Tina Bankard, Lab Technician Dawn Trusty, intern Avery Engel and Quality Assurance Manager Theresa DeAngelo. This project was a great example of teamwork - staff from five units in the MSP-FSD worked together to complete a massive project in a short amount of time.

Commander's Award for Outstanding Performance

Mitch Dinterman, Manager
Crime Scene Section

Director Katz awarded the 2019 Commander's Award to MSP-FSD Crime Scene Section Manager Mitch Dinterman. After a 26 year sworn career that included 13 years as a Crime Scene Technician and 6 years as the Assistant Commander of MSP-FSD, CSS Manager Dinterman just completed his tenth year of civilian service leading MSP-FSD's Crime Scene Section. CSS Manager Dinterman has continuously embraced the concept of quality assurance and, by doing so, has created one of the premiere Crime Scene operations in the nation.


MARYLAND STATE POLICE
FORENSIC SCIENCES DIVISION
is celebrating
National Forensic Science Week
2019

END OF DOCUMENT