

**2018**

**ANNUAL REPORT**

**MARYLAND STATE POLICE**

**FORENSIC SCIENCES DIVISION**



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## **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 13 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 and unified 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 FSD and that those resources are always procured in the most fiscally responsible manner possible.

## **DIRECTOR'S SUMMARY**

*Daniel E. Katz*

This year's Director's Summary coincides with my five year anniversary as Laboratory Director of the Maryland State Police Forensic Sciences Division (MSP-FSD). I have now been in this position as long as my previous two predecessors, Jay Tobin and Terry Long, which is a personal accomplishment that I take pride in as I respect both of them greatly. I still have a ways to go to match the longest tenure for a FSD Director - that is sixteen years by Dr. Louis Portis from 1986 to 2002. We'll see if I make it. ☺ Being that I am five years in, it seemed like a good time to personally address the FSD staff and present a big picture perspective of the Division. Hence, on January 31, 2019 I gave the inaugural FSD State of the Lab Address.

The FSD State of the Lab Address was a great opportunity to improve communication with the staff, something that I stressed in last year's Director's Summary, as well as an opportunity to explain our vision for the future. While we have both a mission statement and vision statement that continue to be our guiding force, it is important to also give specifics on how we strive to meet our short term and long term goals. This involved sharing FSD Management's goals for 2019; along with providing insight into some initiatives that we anticipate coming to fruition within the next five years, while also making some predictions on how our operations may change over the next ten years. It is my hope that the FSD State of the Lab Address will become an annual tradition.

A unified message is critical to the success of any organization. We all need to know what we are working towards; however, to truly succeed we also need to know where we have been. Over the years several individuals have made reference to this concept. Philosopher George Santayana argued, "Those who cannot remember the past are condemned to repeat it." Poet and activist Maya Angelou expressed, "If you don't know where you've come from, you don't know where you're going." Reggae singer Ziggy Marley sang, "If you don't know your past, you don't know your future." Whichever you prefer, the point is clear. Therefore, every year FSD issues this annual report to memorialize the previous year. Doing so highlights our achievements so that we can take pride in them and be motivated by them. Moreover, these annual reports are historical records that are referenced on a routine basis to provide us with a path to follow as we move forward, rather than just wandering into the future aimlessly.

This notion about past and future, old and new, experienced and green, seems quite relevant today as FSD finds itself in a period of transition. Looking at the FSD organization chart reveals something pretty incredible: 33% of the staff has less than five years with MSP and 27% of the staff has less than two years with MSP. This means that we have a significant number of individuals on staff who do not know the full history of FSD. It is the responsibility of the rest of us to make sure that we do the best possible job training this new generation to not only become competent and proficient in the analyses of their forensic discipline, but to also teach them what it means to be part of FSD. We need to teach them about our past so that they know how we got to where we are today. This is essential as eventually these will be the people leading FSD into the future. So, my challenge to the FSD staff who have been here for more than five years is to be leaders, set good examples, and mentor those with less experience.

Equally important, I challenge our newer staff to seek out guidance and respect the wisdom of those with more experience.

I want to be clear though, just because you are younger or have less experience does not mean you cannot be a leader. Our newer staff are well educated and proficient in the technologies that will continue to evolve the field of forensic science. They are sources of fresh ideas and we would be foolish to not use them as a resource as we look to the future. We old-timers can learn much from the newbies; whether it is how to best utilize the latest software, or how newer methods could increase productivity, or just regaining the enthusiasm of getting to do this job for a living.

In closing, it is an exciting time to be part of FSD! We have a dedicated, diverse, and unified workforce. We had another amazing year of achievements in 2018. We are prepared to meet our goals for 2019. We continue to plan for the future. The state of FSD is strong!

## STATISTICAL SUMMARY

<b>Activity Summary - Operational Services Branch</b>			
	<b>2016</b>	<b>2017</b>	<b>2018</b>
<b>Crime Scene Section</b>			
Crime Scenes Processed	644	620	653
<b>Central Receiving Unit</b>			
CDS cases submitted for destruction	7,704	7,296	8,382
Forensic Cases Received	13,617	14,061	14,023
<b>Photography Unit</b>			
Special Assignments	255	268	225
VeriPic/Color Film Rolls Processed	982	974	634
Color Prints	4,324	6,217	5,779
ID Cards	761	609	750

<b>Activity Summary – Scientific Analysis Branch</b>			
	<b>2016</b>	<b>2017</b>	<b>2018</b>
<b>Latent Prints/Impressions</b>			
Cases Received	1,235	1,176	1,014
Cases Completed	1,321	988	1,019
MAFIS Latent Hits	394	323	324
Case Uploads to MAFIS	594	461	456
Latent Print Uploads to MAFIS	1,362	1,039	1,227
<b>Firearms/Toolmarks</b>			
Cases Received	568	678	780
Cases Completed	765	905	822
Number of Firearms for Handgun Roster Board	76	108	130
Case Uploads to NIBIN	480	437	575
Number of NIBIN Leads Generated <sup>1</sup>	N/A	69	32
Number of NIBIN Hits Confirmed	7	39	9
Walk-In Test Fires (# of Firearms)	255	253	198
<b>CDS</b>			
Cases Received in Pikesville	3,216	3,678	3,711
Cases Received in Berlin	2,734	2,672	2,779
Cases Received in Hagerstown	1,340	2,190	1,957
Subtotal Cases Received	7,290	8,540	8,447
Cases Received by Allied Forensic Scientists <sup>2</sup>	2,342	1,379	1,541
Total Cases Received	9,632	9,919	9,988
Cases Completed in Pikesville	2,821	3,214	3,238
Cases Completed in Berlin	2,642	2,594	2,826
Cases Completed in Hagerstown	1,514	1,551	1,804
Subtotal Cases Completed	6,977	7,359	7,868
Cases Completed by Allied Forensic Scientists <sup>2</sup>	2,108	1,371	1,431
Total Cases Completed	9,085	8,730	9,299
<b>Toxicology</b>			
Blood Alcohol Cases Received	740	692	683
Blood Drug Cases Received	347	388	481
Total Cases Received	1,087	1,080	1,164
Blood Alcohol Cases Completed	854	806	664
Blood Drug Cases Completed	338	519	435
Total Cases Completed	1,192	1,325	1,099
<b>Biology</b>			
Submitted Cases Received	675	673	639
Directly Outsourced Cases Received	244	363	265
Total Cases Received	919	1,036	904
Submitted Cases Completed	648	670	640
Directly Outsourced Cases Completed	325	319	266
Total Cases Completed	973	989	906
Maryland Case CODIS Hits	796	986	940
Arrested/Charged CODIS Hits	145	133	128
Convicted Offender Uploads to CODIS	4,038	4,246	3,828
Arrested/Charged Uploads to CODIS	3,555	3,629	2,608
Case Uploads to CODIS	1,010	1,149	1,057

<b>Activity Summary – Scientific Analysis Branch</b>			
	<b>2016</b>	<b>2017</b>	<b>2018</b>
<b>Trace Evidence</b>			
Cases Received	156	151	138
Cases Completed	161	142	151
<b>Question Documents</b>			
Cases Received	20	21	35
Cases Completed	24	34	30

1 – Prior to 2017, NIBIN Leads were not reported to investigating agencies.

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.

<b>Scientific Analysis Branch Casework Summary</b>								
<b>Unit</b>	<b>Cases Received</b>		<b>MSP Cases Received</b>		<b>Allied Agency Cases Received</b>		<b>Cases Completed</b>	
	<b>2017</b>	<b>2018</b>	<b>2017</b>	<b>2018</b>	<b>2017</b>	<b>2018</b>	<b>2017</b>	<b>2018</b>
Latent Prints/Impressions	1,176	1,014	19%	22%	81%	78%	988	1,019
Firearms/Toolmarks	678	780	28%	29%	72%	71%	905	822
CDS-Pikesville	3,678	3,711	31%	30%	69%	70%	3,214	3,238
CDS-Berlin	2,672	2,779	25%	29%	75%	71%	2,594	2,826
CDS-Hagerstown	2,190	1,957	24%	30%	76%	70%	1,551	1,804
CDS-Allied <sup>1</sup>	1,379	1,541	25%	29%	75%	71%	1,371	1,431
Toxicology	1,080	1,164	35%	33%	65%	67%	1,325	1,099
Biology- Submitted	673	639	17%	20%	83%	80%	670	640
Biology- Direct Outsourcing	363	265	1%	1%	99%	99%	319	266
Trace Evidence	151	138	40%	42%	60%	58%	142	151
Questioned Documents	21	35	38%	14%	62%	86%	34	30
<b>Totals</b>	<b>14,061<sup>2</sup></b>	<b>14,023<sup>2</sup></b>	<b>27%</b>	<b>28%</b>	<b>73%</b>	<b>72%</b>	<b>13,113</b>	<b>13,326</b>

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. The Frederick Co. SAO Allied Forensic resigned in 2017. At that point, Frederick Co. cases were assigned to CDS-Hagerstown.

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

<b>Laboratory Backlogs and Turn Around Times</b>				
<b>Casework Type</b>	<b>Pending Caseload (Cases)<sup>1</sup></b>	<b>Backlog (Cases pending &gt;30 days)<sup>1</sup></b>	<b>2018 Turn Around Time (Calendar Days)<sup>2</sup></b>	<b>4th Quarter Turn Around Time (Calendar Days)<sup>3</sup></b>
Latent Prints/Impressions	385	307	123	119
Firearms/Toolmarks	558	493	259	226
CDS-Pikesville	1,355	1,030	89	103
CDS-Berlin	346	184	53	57
CDS-Hagerstown	1,128	994	187	192
CDS-Allied	247	157	36	39
Toxicology	180	97	46	36
Biology-Submitted	185	140	91	124
Biology-Directly Outsourced	84	74	128	115
Trace Evidence	7	2	35	24
Question Documents	8	4	82	78
<b>Totals</b>	<b>4,522</b>	<b>3,522</b>	<b>93</b>	<b>97</b>

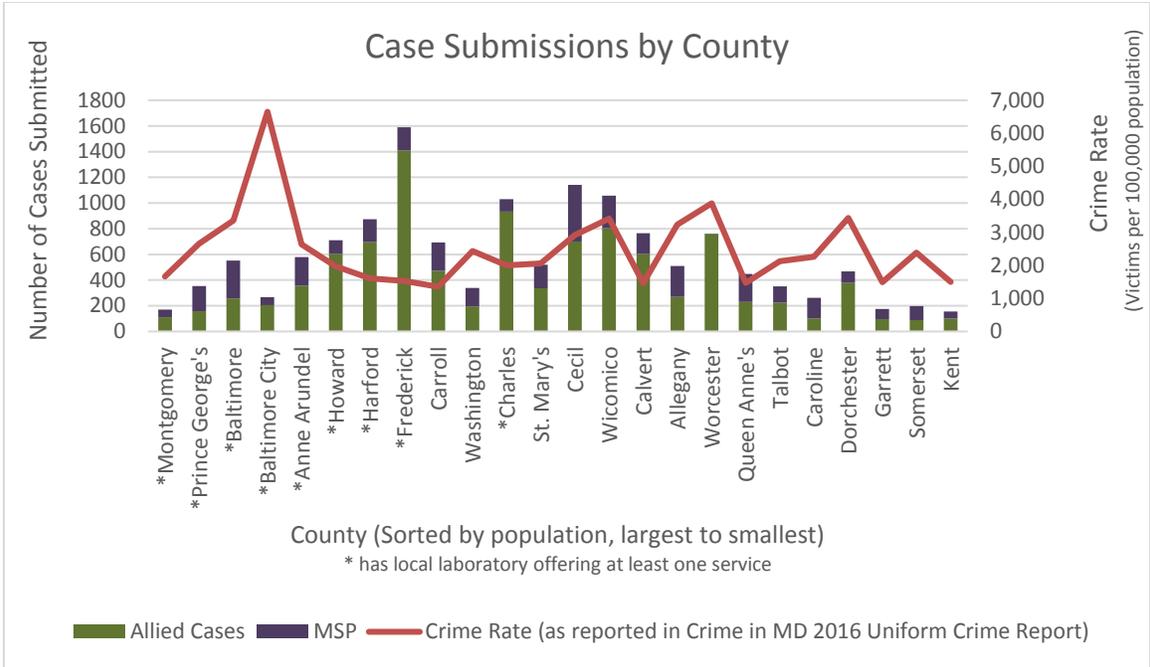
1. Number of cases as of last day of calendar year.
2. Average turnaround time for cases completed throughout the calendar year.
3. Average turnaround time for cases completed during the 4<sup>th</sup> quarter.

Quantity of FSD Requests by County						
County	2017			2018		
	Cases Submitted to Lab	Crime Scenes	Total	Cases Submitted to Lab	Crime Scenes	Total
Frederick	1,640	27	1,667	1,589	19	1,608
Cecil	997	58	1,055	1,142	52	1,194
Wicomico	1,044	89	1,133	1,058	64	1,122
Charles	1,043	5	1,048	1,031	2	1,033
Harford	1,034	22	1,056	874	15	889
Worcester	941	35	976	763	30	793
Calvert	709	3	712	764	9	773
Carroll	673	31	704	693	37	730
Howard	672	3	675	711	4	715
Anne Arundel	609	15	624	579	35	614
Baltimore	419	24	443	551	53	604
Allegany	557	63	620	510	52	562
St. Mary's	557	1	558	520	7	527
Queen Anne's	405	40	445	448	32	480
Dorchester	539	17	556	468	11	479
Talbot	369	35	404	350	47	397
Prince George's	273	7	280	354	17	371
Washington	339	11	350	338	17	355
Baltimore City	191	23	214	267	29	296
Caroline	270	23	293	263	21	284
Somerset	255	54	309	197	65	262
Garret	172	11	183	176	20	196
Montgomery	155	4	159	171	3	174
Kent	140	15	155	155	11	166
Statewide/Not Determined*	50	0	50	27	0	27
Out of State	8	4	12	24	1	25
<b>Totals</b>	<b>14,061</b>	<b>620</b>	<b>14,681</b>	<b>14,023</b>	<b>653</b>	<b>14,676</b>

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

<b>Quantity of Laboratory Submissions to FSD Ranked by MSP Installation</b>			
<b>2018 Rank</b>	<b>2017 Rank</b>	<b>MSP Installation</b>	<b>Counties Served</b>
1	1	MSP-CID/CED	Statewide
2	2	MSP-Easton	Caroline, Dorchester, Talbot
3	4	MSP-North East	Cecil
4	7	MSP-Centerville	Kent, Queen Anne's
5	11	MSP-Golden Ring	Baltimore
6	3	MSP-Cumberland	Allegany
6	6	MSP-Salisbury	Wicomico
7	5	MSP-Westminster	Carroll
8	10	MSP-Leonardtown	St. Mary's
9	12	MSP-Frederick	Frederick
10	9	MSP-Prince Frederick	Calvert
11	14	MSP-Hagerstown	Washington
12	8	MSP-Bel Air	Harford
12	18	MSP-Glen Burnie	Anne Arundel
13	13	MSP-JFK Highway	Cecil, Harford, Baltimore
14	23	MSP-Princess Anne	Somerset
15	21	MSP-Waterloo	Howard
16	17	MSP-La Plata	Charles
16	18	MSP-College Park	Prince George's
16	18	MSP-Forestville	Prince George's
16	24	MSP-Berlin	Worcester
17	16	MSP-McHenry	Garrett
18	24	MSP-Annapolis	Anne Arundel
19	26	MSP-Rockville	Montgomery
20	14	Office of State Fire Marshall	Statewide
21	27	MSP-Homicide	Statewide
22	21	MSP-DED/C3I	Statewide
23	28	MSP-Crash Team	Statewide
24	29	MSP-CVED	Statewide
	30	MSP-Auto Theft Team	Statewide

<b>Quantity of Laboratory Submissions to FSD Ranked by Allied Agency County</b>		
<b>2018 Rank</b>	<b>2017 Rank</b>	<b>County</b>
1	1	Frederick
2	2	Charles
3	3	Worcester
4	4	Wicomico
5	6	Cecil
6	5	Harford
7	8	Calvert
8	7	Howard
9	10	Carroll
10	9	Dorchester
11	11	Anne Arundel
12	12	St. Mary's
13	13	Allegany
14	15	Baltimore
15	17	Queen Anne's
16	14	Talbot
17	19	Baltimore City
18	16	Washington
19	23	Prince George's
20	22	Montgomery
21	21	Kent
22	20	Caroline
23	24	Garrett
24	18	Somerset
26		Statewide
27	25	Out of State



## **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 returned to nearly full staff in 2018, which may explain the increase in the number of crime scenes handled this year.

Most of the evidence examined by the 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 sheriffs' 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 a key player in the 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 school 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 2018. 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

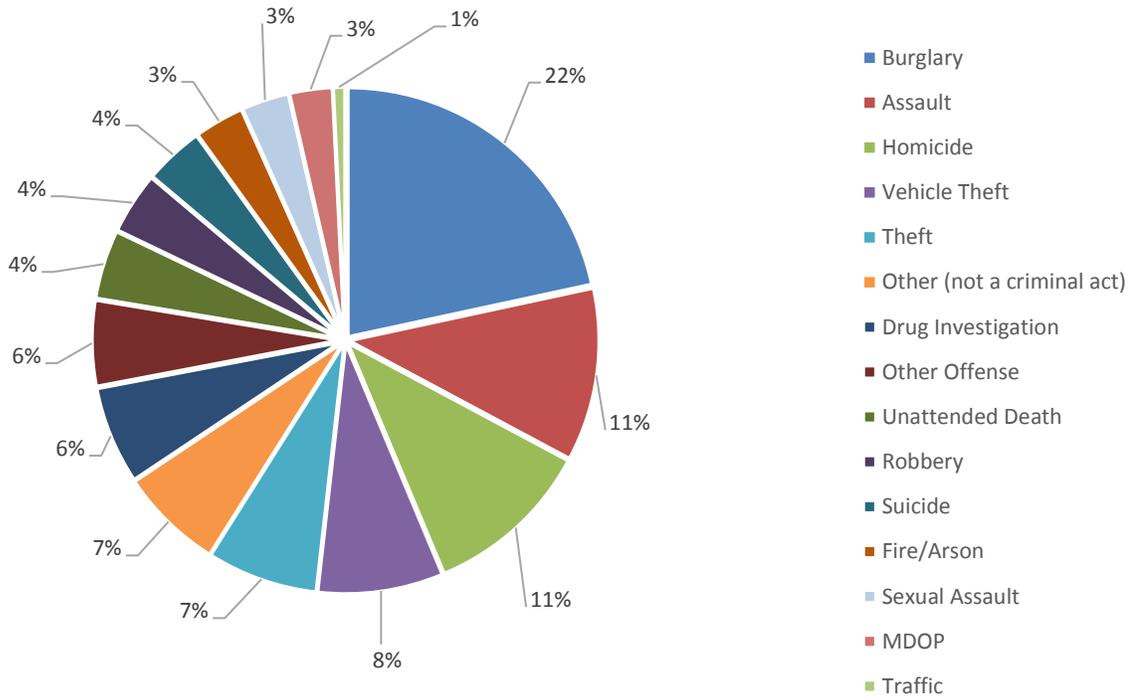
Central Region Unit: Anne Arundel, Harford, Baltimore, Cecil, Prince George’s, Calvert, Charles, St. Mary’s Counties as well as Baltimore City (Maryland Port Authority, Maryland Transportation Authority, DOC)

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

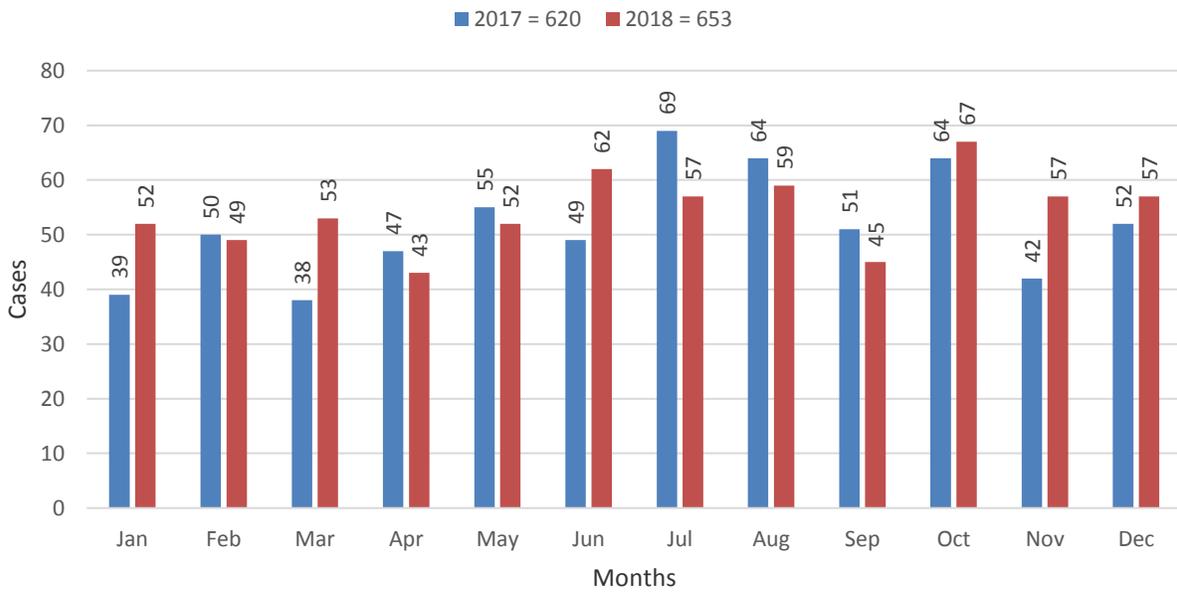
Crime Scene Summary								
Crime Scene Region	Scenes Processed		MSP Scenes		Allied Agency		Scene Assists	
	2017	2018	2017	2018	2017	2018	2017	2018
Eastern	312	295	54%	58%	46%	42%	18	25
Western	117	124	66%	63%	34%	37%	15	17
Central	191	234	73%	74%	27%	26%	47	17
<b>Totals</b>	<b>620</b>	<b>653</b>	<b>62%</b>	<b>64%</b>	<b>38%</b>	<b>36%</b>	<b>80</b>	<b>59</b>

<b>Total Number of Crime Scenes Processed per County</b>	
<b>County</b>	<b>Total Crime Scenes</b>
Somerset	65
Wicomico	64
Baltimore	53
Allegany	52
Cecil	52
Talbot	47
Carroll	37
Anne Arundel	35
Queen Anne's	32
Worcester	30
Baltimore City	29
Caroline	21
Garrett	20
Frederick	19
Prince George's	17
Washington	17
Harford	15
Dorchester	11
Kent	11
Calvert	9
Saint Mary's	7
Howard	4
Montgomery	3
Charles	2
Out of State	1
<b>TOTAL</b>	<b>653</b>

### Crime Scenes Per Crime Type



### Number of Crime Scenes per Month



## **NOTEWORTHY CASES**

### **Western Region**

On January 13, 2018, CST Anschuetz was requested by Troopers from Frederick Barrack to process a driver side air bag removed from a vehicle involved in a fatal accident to help determine the driver of the vehicle at the time of the collision. CST Anschuetz obtained two swabs from the airbag which were submitted to the Laboratory which resulted in the identification of the driver.

On June 22, 2018, CST Levey responded to the MSP Hagerstown Barrack to process a recovered stolen dirt bike with an obliterated serial number. She successfully retrieved the entire vehicle identification number that resulted in the identification of the owner.

On June 28, 2018, CST Jeudy received an empty gun box from Cumberland City Police that officers had recovered from the scene of a burglary. CST Jeudy processed the box and was able to recover latent prints that identified the suspect.

On July 17, 2018, CST Frantz responded to Taneytown to assist the Office of the State Fire Marshal for an arson investigation. She collected a glove she found near the garage that caught fire. CST Frantz also recovered bolt covers near the end of the victim's driveway. She swabbed both items for DNA and submitted the samples to the Laboratory which resulted in the identification of a suspect in the case.

### **Central Region**

On January 17, 2018, CST Sexton responded to a business in Fallston in reference to a burglary investigation where the suspects entered through a roof gable. A hammer located in the attic rafters near the point of entry was swabbed for possible DNA. CST Sexton submitted the swabs to the Laboratory which resulted in the identification of a suspect who was later linked to numerous burglaries in Maryland and Delaware.

On May 9, 2018, CST Idso processed a recovered rental vehicle found in Baltimore belonging to a missing person from New York. Bloodstains in the rear of the vehicle and a handgun from the suspect's residence were tested for DNA and were positively linked to the victim.

On May 11, 2018, CST Myer processed a vehicle associated with a multi-agency drug investigation in Anne Arundel County where the suspect had fled the scene of a traffic stop. She collected latent prints, a pocket knife and numerous swabs for possible touch DNA from the vehicle as well as the knife. She submitted the DNA to the laboratory which resulted in the identification of the fleeing suspect.

On June 12, 2018, CST Iman responded to the Office of the Chief Medical Examiner at the request of the MSP Crash Team to help to identify a person who had been struck and killed by a motor vehicle in Princes Georges County. The victim was dismembered after being hit by

numerous vehicles. CST Iman printed the individual and submitted the fingerprints to the Latent Print/Impression Unit enabling them to identify the victim.

### **Eastern Region**

On March 4, 2018, CST Harvey responded to a Centreville neighborhood for a report of items stolen from unlocked vehicles. She processed one of the vehicles along with items the suspect may have touched – she obtained latent prints and DNA swabs. CST Harvey submitted the items to the Laboratory which resulted in the identification of a juvenile suspect.

On March 17, 2018, CST Kortchak responded to a homicide in Salisbury where an older male was found deceased in his home suffering from multiple stab wounds. There was a significant amount of suspected blood spatter throughout the single-family home, as well as signs of an apparent clean up. CST Kortchak collected DNA samples from a bloodstain on the floor near the toilet and a bloodstain on the shower wall that both matched the DNA of a person of interest who was later identified by the investigators.

On August 11, 2017, CST Zack responded to four burglary scenes in Somerset County where many items were taken and two vehicles were stolen. Police later recovered two of the stolen vehicles, one on the same day and another four days later. Investigators apprehended a suspect on the day of the burglaries and searched and processed his vehicle. Items stolen from the burglaries were located in his home. CST Zack processed the items and vehicles for DNA and fingerprints and collected a total of 16 latent print cards and 16 swabs. On February 21, 2018, CST Zack was contacted by the States Attorney in Somerset County who advised that the suspect could not be excluded as a significant contributor from a swab collected from one of the vehicles and that the fingerprint evidence came back as inconclusive as the latent print examiner needed “major case” prints from the suspect. On February 27, 2018, CST Zack responded to the Eastern Correctional Institution and obtained major case prints from the suspect that resulted in a positive identification of the suspect who plead guilty to both 1st and 2nd degree burglary in April resulting in a 10-year sentence.

On August 18, 2017, CST Idso processed a vehicle linked to a Salisbury murder when the victim was beaten and stabbed by multiple individuals. She discovered and collected samples from several small bloodstains from the rear of the vehicle and submitted these samples to the Laboratory which identified the suspects who were convicted in 2018.

On September 25, 2017, CST Woods processed a suspect vehicle, a handgun and a paper bag and paper towel used to hold the weapon for a homicide investigation for possible latent prints and DNA. On February 6, 2018, CST Woods received notification that the DNA swabs collected from the vehicle and handgun were identified to the victim and the DNA swab from the towel was identified to the suspect. The suspect is currently awaiting trial.

On December 19, 2017, a Cambridge police officer was attempting to stop and talk to a male subject who was walking down the street. When the officer approached the individual he immediately shot at the officer and fled the scene. CST Idso processed the scene and recovered a cigarette butt, handgun, cartridges and a casing that were found behind a fence along the route of the fleeing suspect. The cigarette butt was tested for DNA in 2018 that identified the suspect.

## **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 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 will join the team in the first quarter of 2019.

### **PHOTOGRAPHY UNIT**

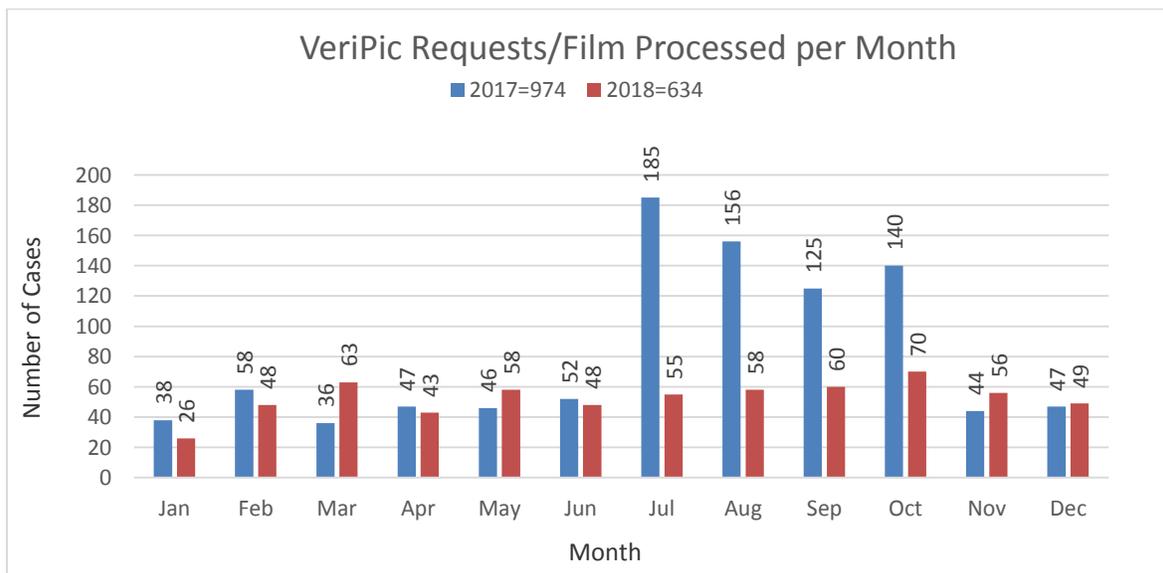
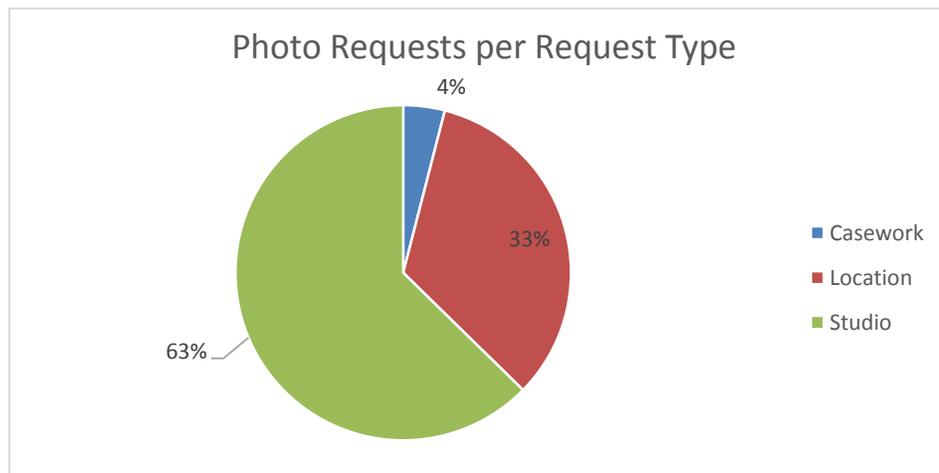
The Photography Unit provides photographic services to the Maryland State Police.

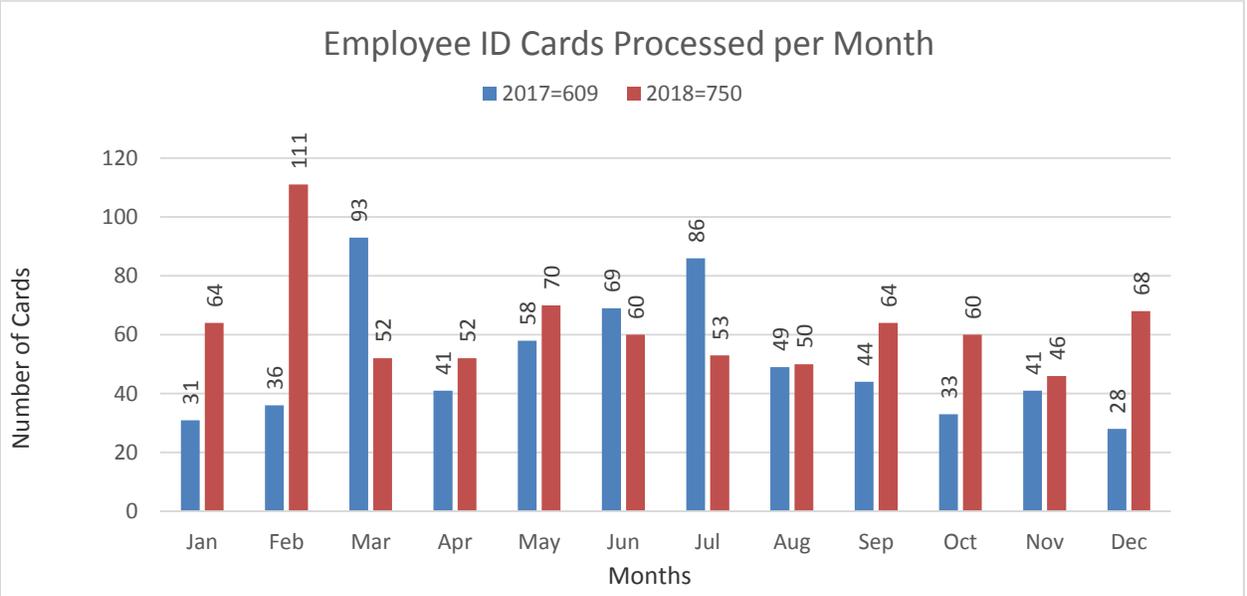
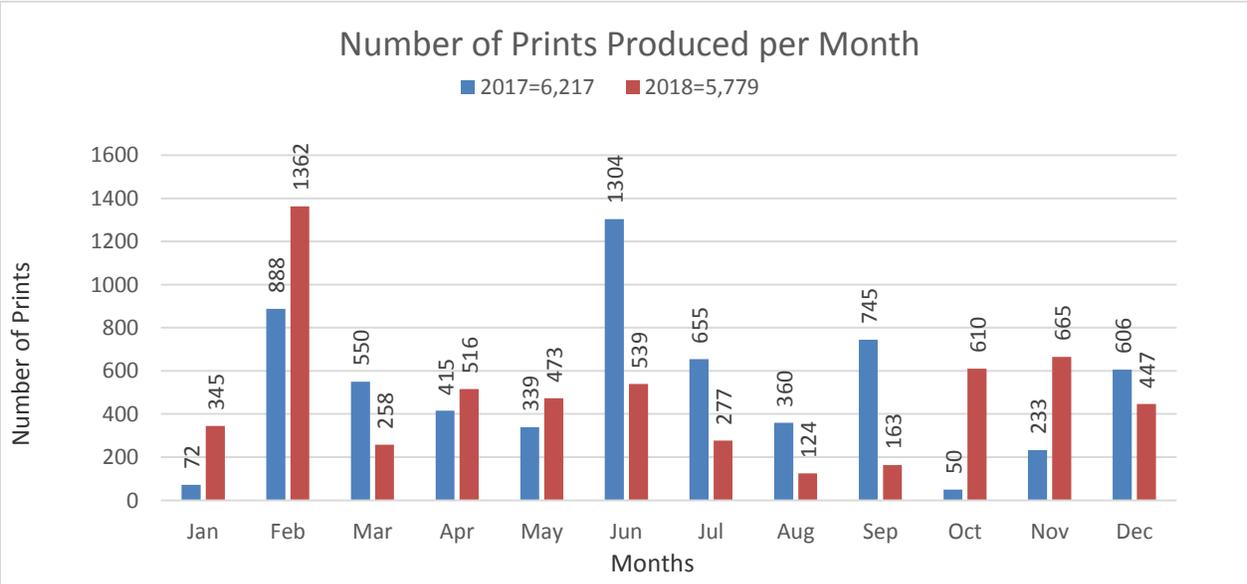
Duties within the Unit include the development and printing of images related to crime scenes and motor vehicle accidents for the Maryland State Police and other agencies. This Unit also serves as the VeriPic system administrator. Reprints or CDs are provided to various divisions and units throughout 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 2018 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. Unit staff also helped create state-wide gas pump toppers which communicate safety messages.

In 2019, the Photography Unit will pursue the possibility of moving VeriPic into a cloud based system with possible connectivity into the RMS. The goal of this change is to make the system easier for personnel to use, have an integrated system with the RMS, and continue to safeguard our Department's images.

Photography Unit personnel serve as members of the Disaster Identification Team and provide technical training in photography. This Unit, along with the Latent Print/Impressions Unit, is being trained in the latest latent print photography software.

Photography Requests	
MSP Requestors	Requests
Portraits ( <i>by # of days not requestors</i> )	141
Headquarters	38
Forensic Sciences Division	9
Barracks	15
Training	11
Special Operations Division	9
Aviation	2
<b>TOTAL</b>	<b>225</b>





## **CENTRAL RECEIVING UNIT**

The Central Receiving Unit (CRU) functions as the liaison between the 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 FSD Assistant Commander.

### **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 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.

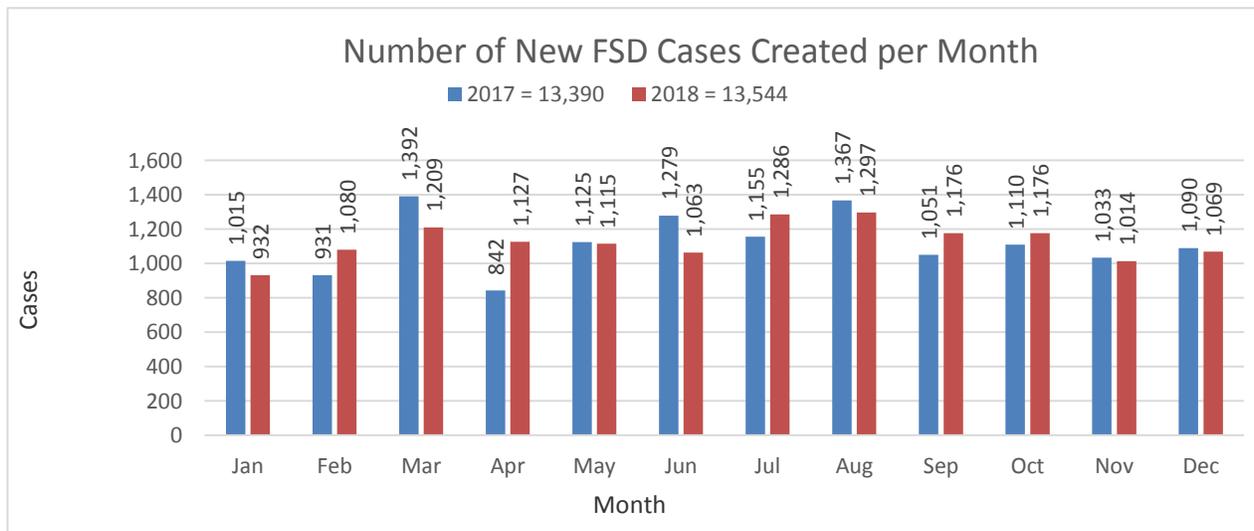
The CRU is also responsible for archiving scientific analytical reports for all sections of the FSD and coordinates the transmittal of files to and from the State Records Management Center. The CRU maintains expunged records for the Division.

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 manager at StarLIMS.

In 2018 the Hagerstown Central Receiving Unit began regularly emailing lab reports and MSP Form 67s from within the StarLIMS system offering an expedited delivery of results to case investigators and State’s Attorney’s Offices.

In June of 2018 an IT Quality Assurance Specialist was hired to assist with the maintenance and enhancements to the StarLIMS system. A new version of StarLIMS became available and the FSD began working on uploading that version to our servers. The IT Quality Assurance Specialist and the StarLIMS Administrator configured the new version to meet the needs of the FSD. Initial testing will begin in January 2019 with the second phase to follow during the 2<sup>nd</sup> quarter.

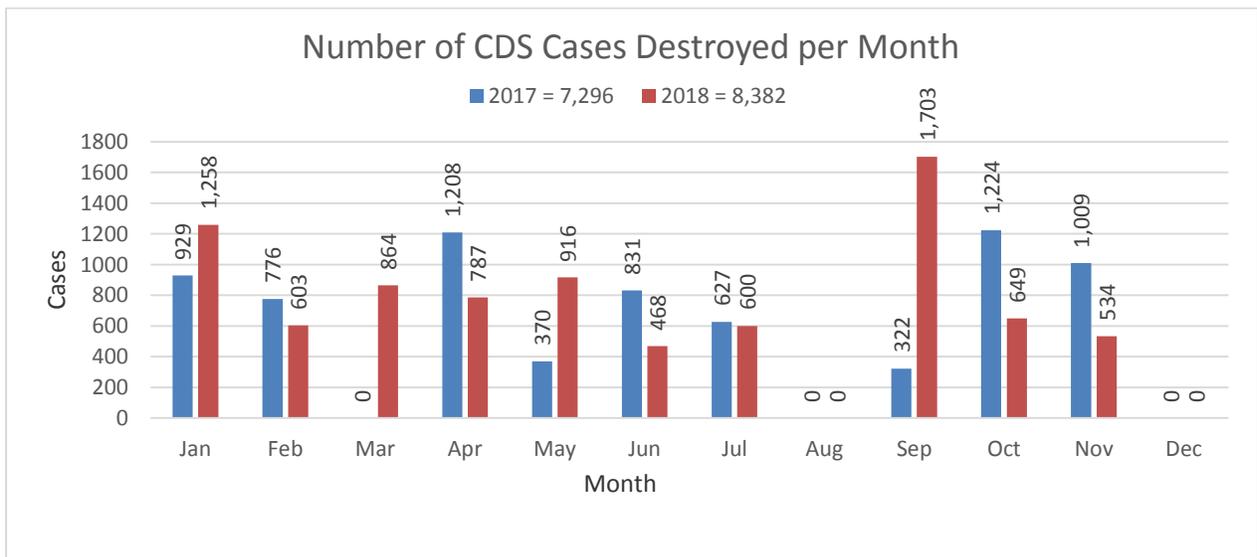
During 2018 the Pikesville location hired two MSP-FICO’s to fill vacant positions. These two individuals have proven to be a great asset to the Unit. They have both completed their required training and received Director’s Authorization and Competency Certificates in the field of Evidence Handling. Throughout 2018, the CRU continued to have the support of a light duty Master Trooper to assist with the workload.



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

Number of Containers Received by Lab			
	Berlin	Hagerstown	Pikesville
Jan	161	210	877
Feb	205	195	1,072
Mar	280	231	1,002
Apr	230	201	1,023
May	281	241	899
Jun	306	189	946
Jul	316	232	1,142
Aug	239	378	1,102
Sep	238	286	1,000
Oct	194	241	1,220
Nov	237	138	913
Dec	184	215	1,019
<b>Total</b>	<b>2,871</b>	<b>2,757</b>	<b>12,215</b>

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 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 FSD staff with what they need to do their jobs in the field and in the laboratory.

In addition to the FSD administrative staff, a contractual employee that is sub-contracted through LB & B Associates is assigned to provide security/receptionist coverage for the 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.

## **PATTERN EVIDENCE SECTION**

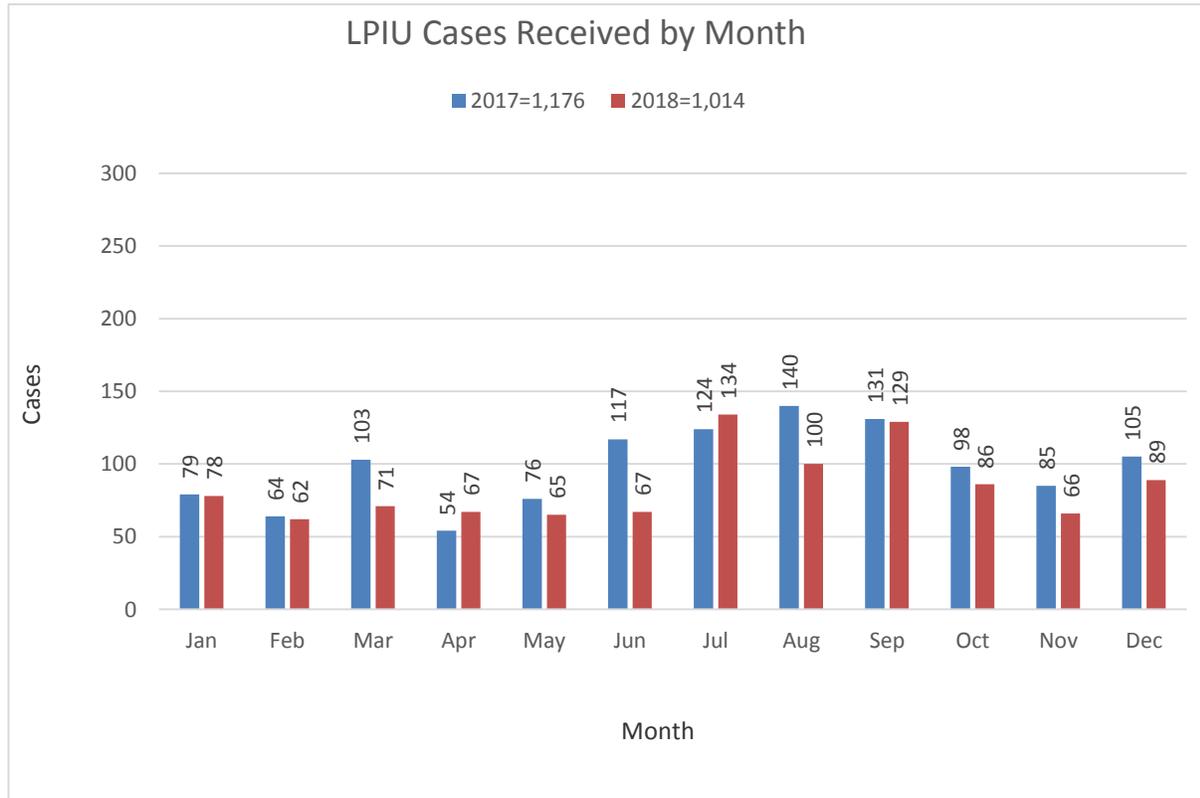
The Pattern Evidence Section is comprised of two units: the Latent Prints/Impressions Unit (LPIU) and the Firearm/Toolmarks Unit (FATMU). Both units operate out of the Pikesville laboratory and there is an additional LPIU in Hagerstown. The FATMU performs analysis on firearms and toolmarks using comparison 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 who oversees both units. The LPIU consists of two supervisors (Pikesville/Hagerstown), two Forensic Scientist Advanced positions, two Forensic Scientist III's (one part-time contractual, one full time), one Forensic Scientist II, one Forensic Scientist I and one vacant Forensic Scientist position. The FATMU consists of one supervisor, two Forensic Scientist III's, two Forensic Scientist II's, three Laboratory Technicians (two of these positions are vacant), and two vacant Forensic Scientist Advanced positions. 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).

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" conclusions are reached, a second examiner performs an independent verification.

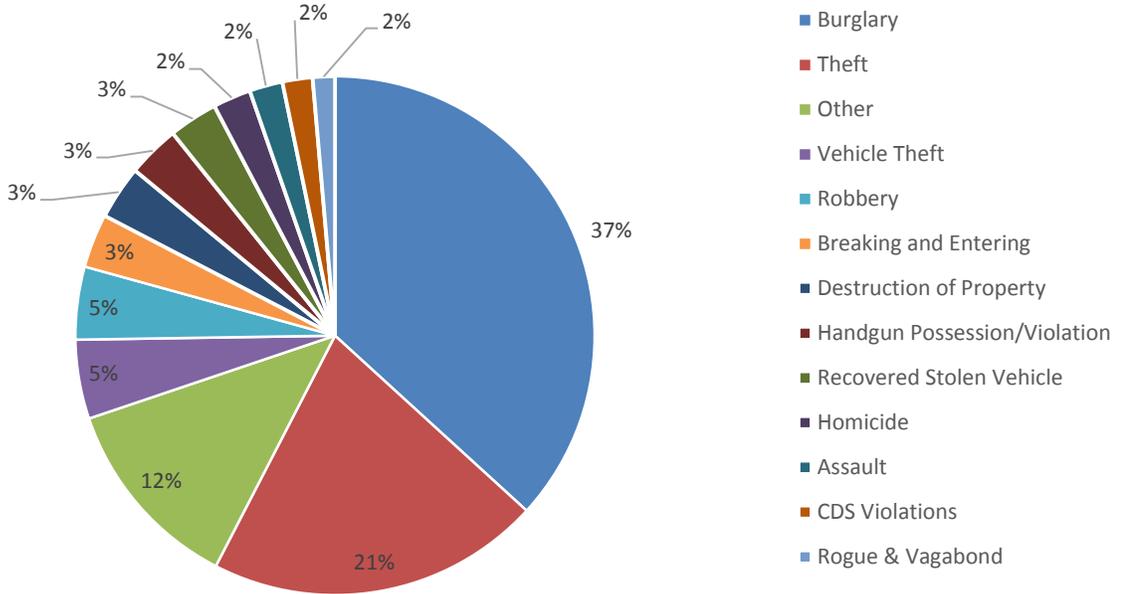
## Latent Print/Impressions Casework Statistics



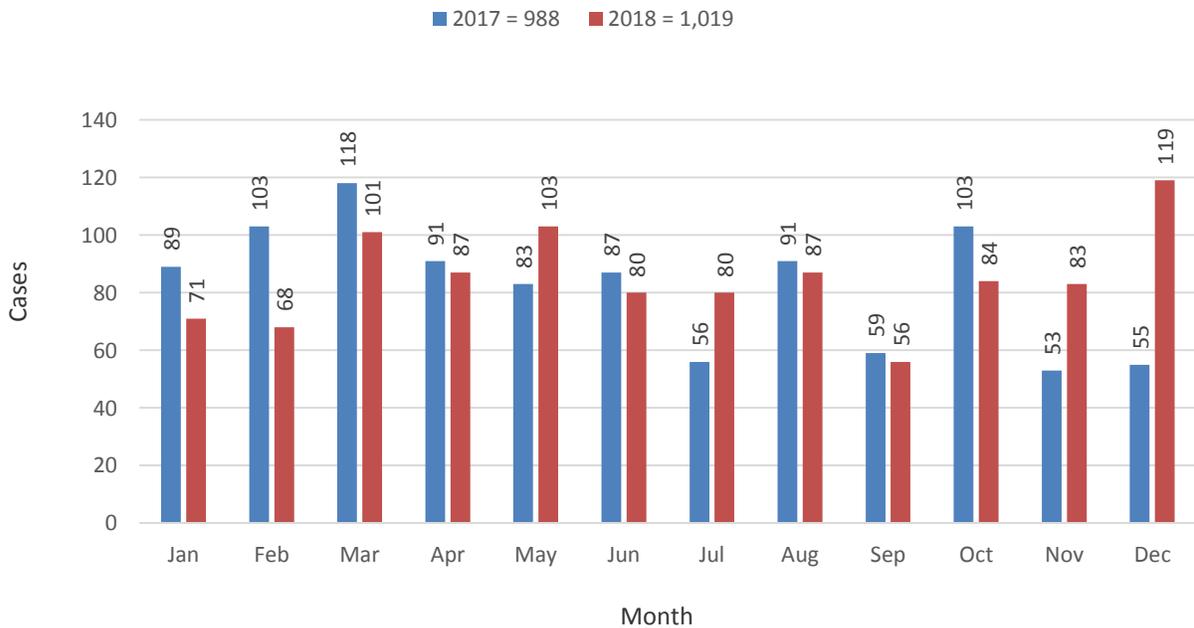
<b>LPIU Cases Received per MSP Installation</b>		
<b>MSP Installation</b>	<b>Counties Served</b>	<b>Submissions</b>
MSP-North East	Cecil	23
MSP-CID/CED	Statewide	17
MSP-Berlin	Worcester	16
MSP-Westminster	Carroll	15
MSP-Easton	Talbot, Caroline, Dorchester	15
MSP-Salisbury	Wicomico	12
MSP-Hagerstown	Washington	11
MSP-Centerville	Kent, Queen Anne's	10
MSP-Leonardtown	St. Mary's	10
MSP-Princess Anne	Somerset	10
MSP-Bel Air	Harford	8
MSP-Frederick	Frederick	8
MSP- Cumberland	Allegany	7
MSP-Prince Frederick	Calvert	7
MSP-McHenry	Garrett	7
MSP-DED/C3I	Statewide	7
MSP-Homicide	Statewide	7
MSP-Forestville	Prince George's	5
MSP-JFK Hwy	Cecil, Harford, Baltimore	5
MSP-Rockville	Montgomery	4
MSP-College Park	Prince George's	4
MSP-Golden Ring	Baltimore	4
MSP-Glen Burnie	Anne Arundel	3
OSFM	Statewide	3
MSP-Annapolis	Anne Arundel	2
MSP-La Plata	Charles	1
MSP-Crash Team	Statewide	1
	<b>TOTAL</b>	<b>222</b>

<b>Allied Agency Cases Received by LPIU per County</b>	
<b>County</b>	<b>Submissions</b>
Worcester	120
Wicomico	98
St. Mary's	86
Frederick	85
Dorchester	75
Prince Georges	74
Carroll	70
Washington	42
Talbot	27
Cecil	20
Anne Arundel	15
Garrett	13
Allegany	12
Baltimore City	10
Calvert	10
Queen Anne's	8
Baltimore	6
Harford	5
Kent	5
Caroline	4
Somerset	4
Charles	2
Howard	1
<b>TOTAL</b>	<b>792</b>

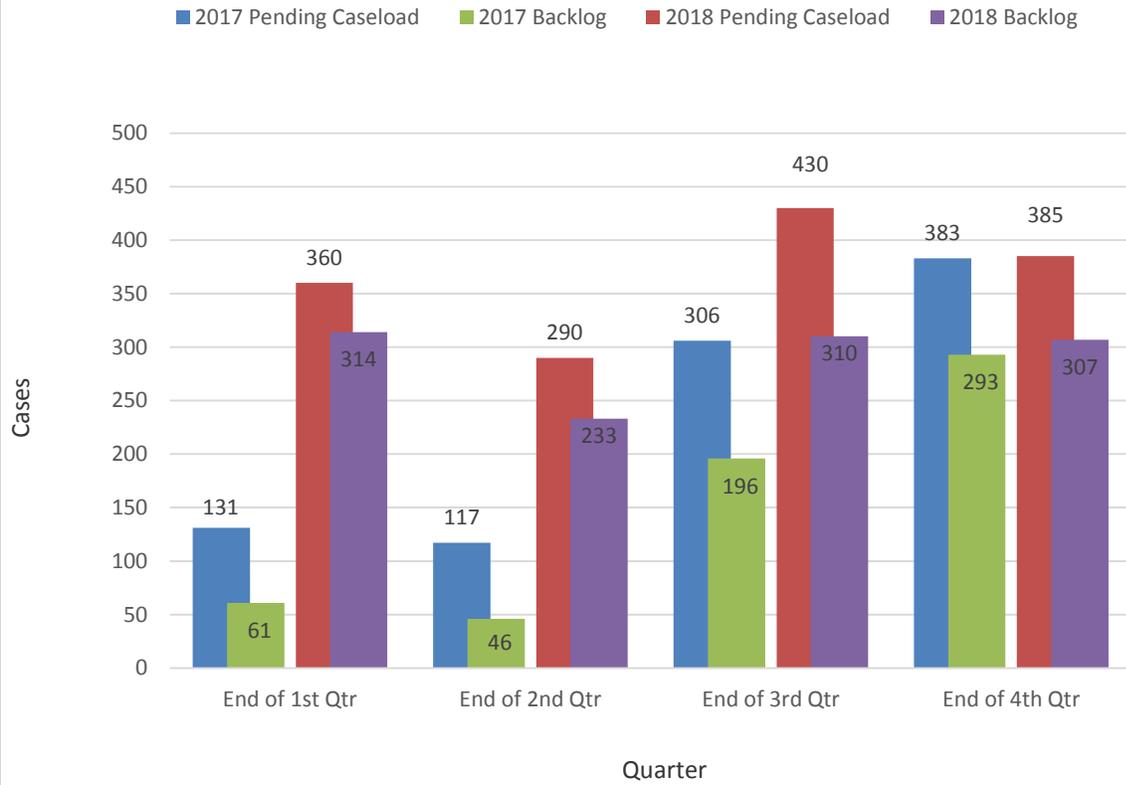
### LPIU Cases Received per Crime Type



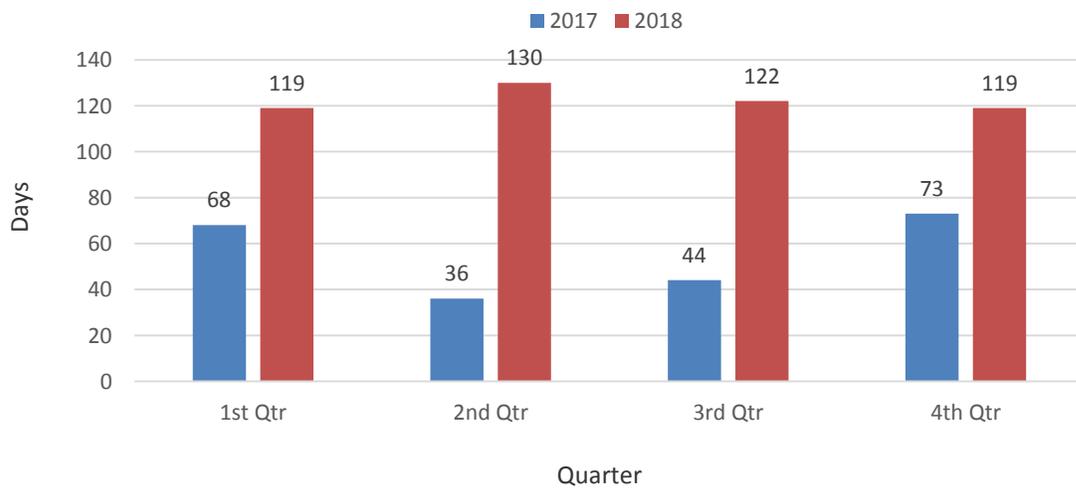
### LPIU Cases Completed per Month



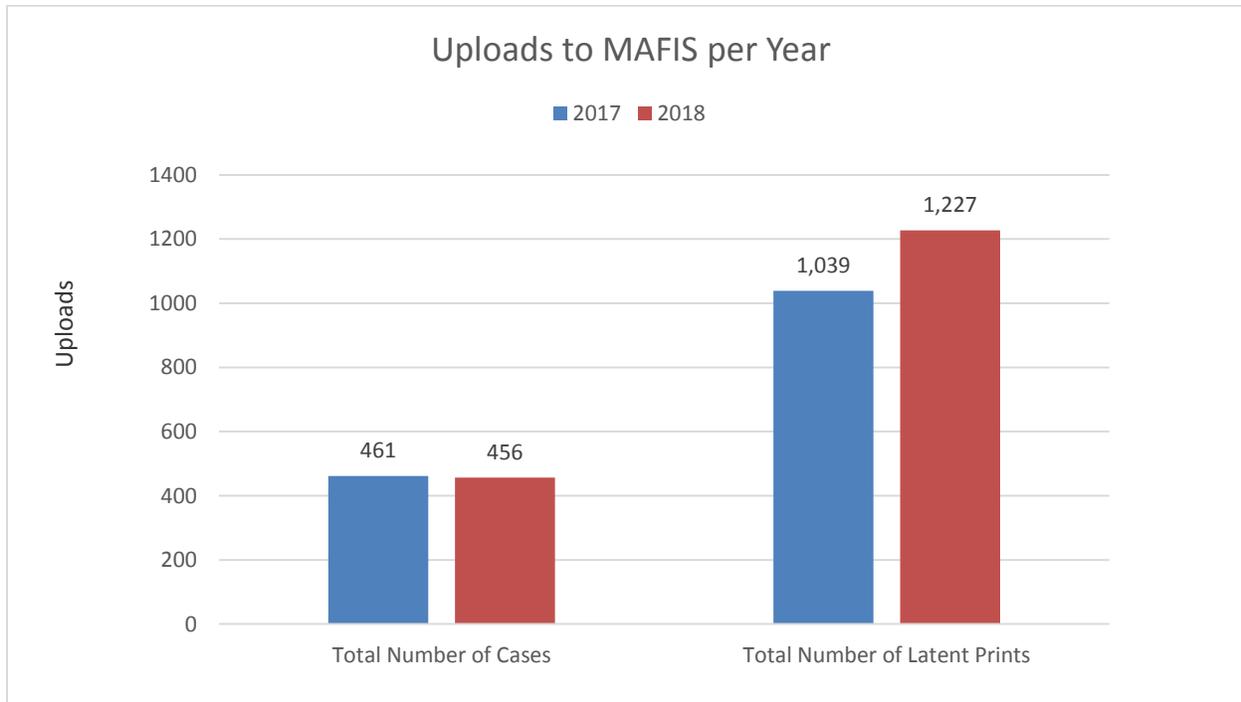
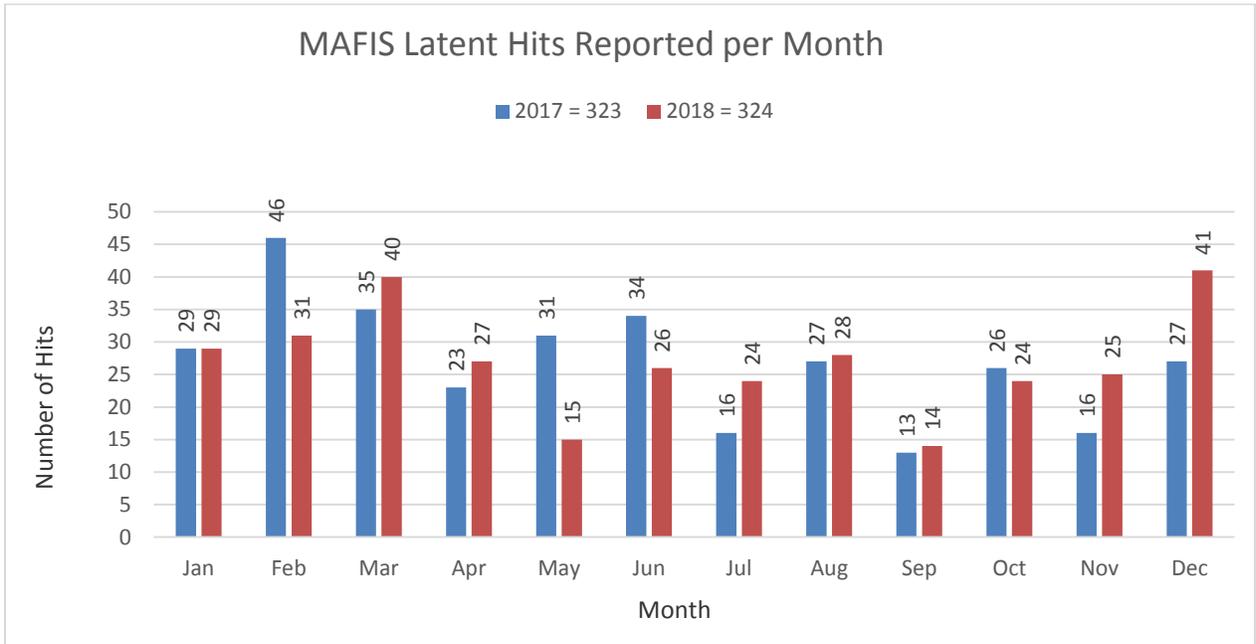
### LPIU Pending Caseload and Backlog per Quarter



### LPIU Case Turn Around Time per Quarter



## Latent Print/Impressions Database Statistics



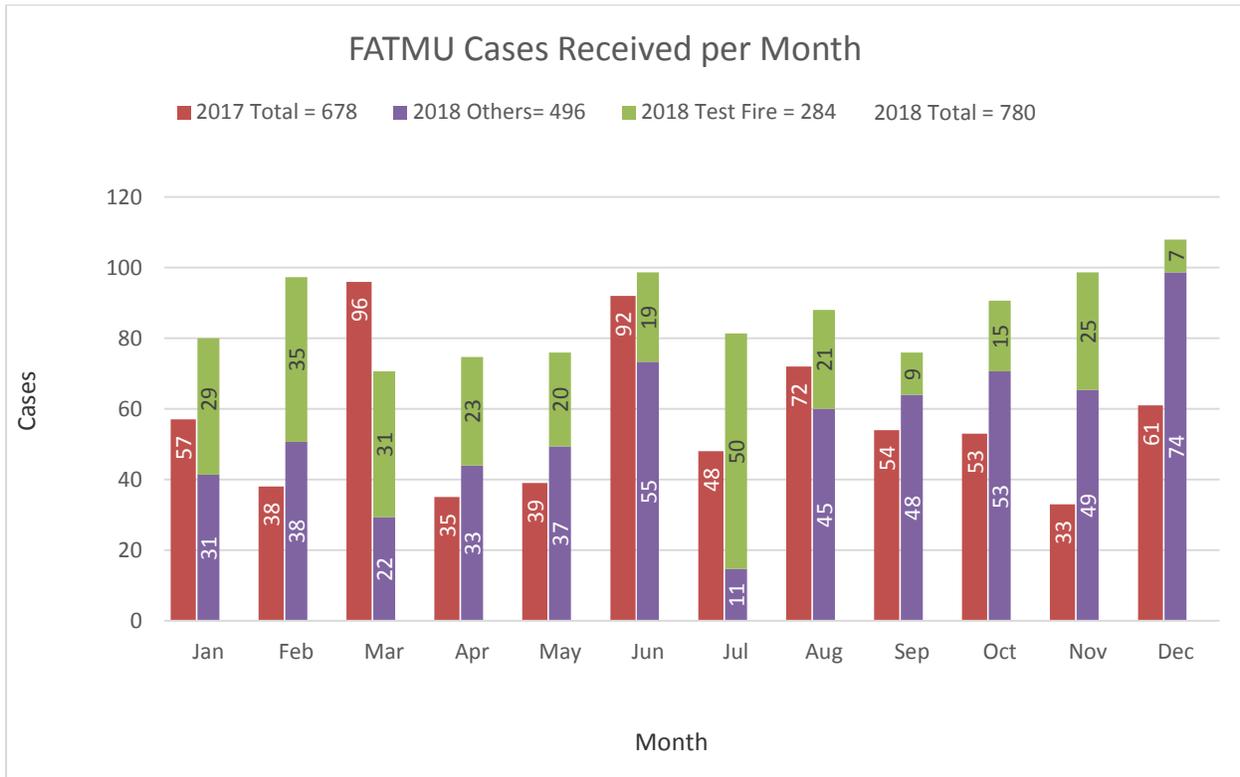
## **FIREARMS/TOOLMARKS UNIT**

The Firearm/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 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.

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

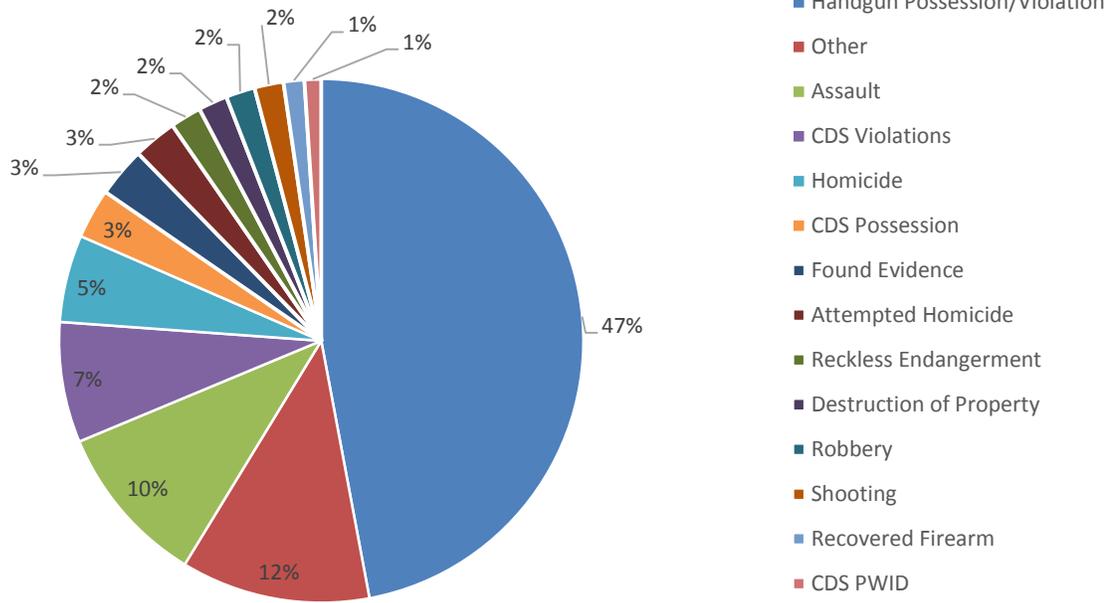


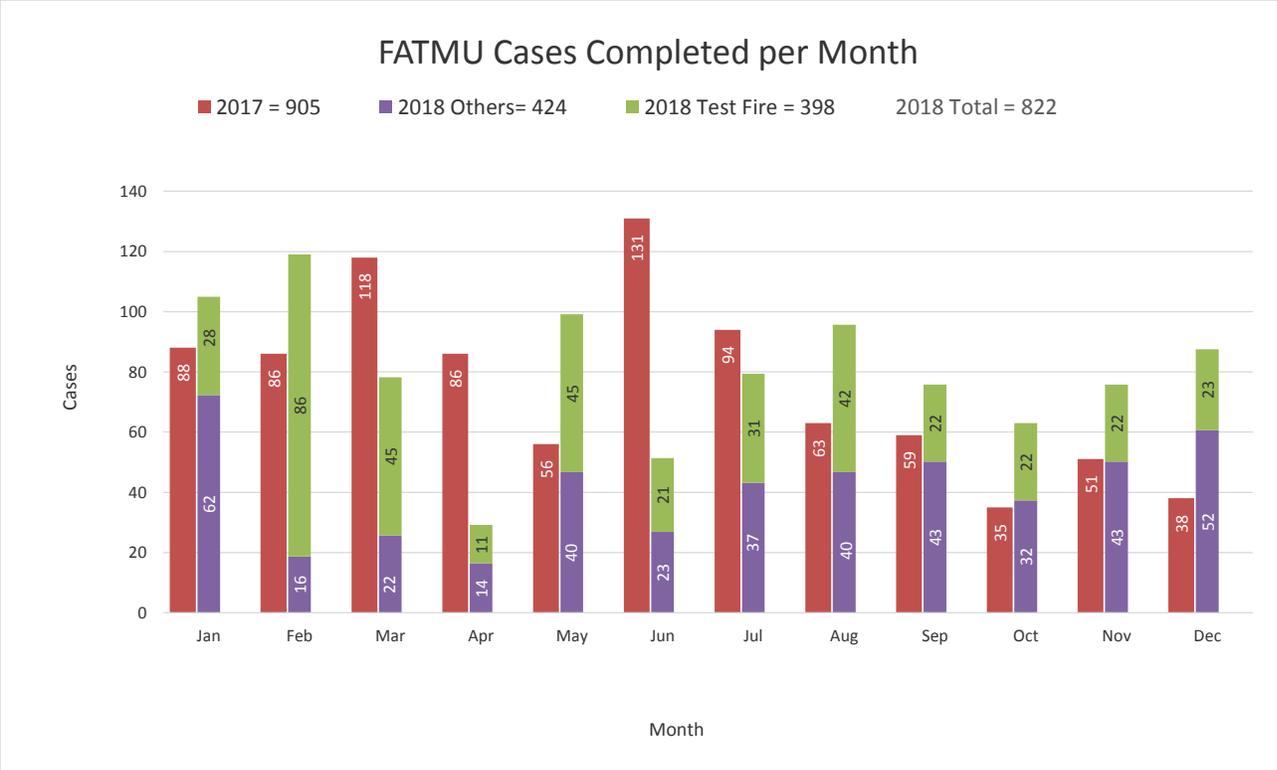
Note: Cases were not broken down by category prior to 2018. Test fire = operability with and without serial number restoration. Others = all other types including OTS and microscopic comparisons.

<b>FATMU Cases Received per MSP Installation</b>				
<b>Installation</b>	<b>Counties Served</b>	<b>Test Fire</b>	<b>Others</b>	<b>Total</b>
MSP-CID/CED	Statewide	41	22	63
MSP-Golden Ring	Baltimore	17	5	22
MSP-Leonardtown	St. Mary's	5	9	14
MSP-Westminster	Carroll	12	0	12
MSP-Forestville	Prince George's	6	5	11
MSP-North East	Cecil	4	6	10
MSP-JFK Hwy	Cecil, Harford, Baltimore	8	2	10
MSP-College Park	Prince George's	6	3	9
MSP-Homicide	Statewide	1	8	9
MSP-Glen Burnie	Anne Arundel	5	3	8
MSP-Princess Anne	Somerset	3	5	8
MSP-Frederick	Frederick	7	0	7
MSP-Annapolis	#N/A	3	3	6
MSP-Waterloo	Howard	4	1	5
MSP-La Plata	Charles	5	0	5
MSP-Easton	Caroline, Dorchester, Talbot	4	1	5
MSP-McHenry	Garrett	1	4	5
MSP-Salisbury	Wicomico	1	3	4
MSP-Centerville	Kent, Queen Anne's	3	1	4
MSP-Berlin	Worcester	0	4	4
MSP-Bel Air	Harford	1	2	3
MSP-Prince Frederick	Calvert	0	2	2
MSP-Hagerstown	Washington	1	0	1
MSP-DED/C3I	Statewide	1	0	1
	<b>TOTAL</b>	<b>139</b>	<b>89</b>	<b>228</b>

<b>Allied Agency Cases Received by FATMU per County</b>			
<b>County</b>	<b>Test Fire</b>	<b>Others</b>	<b>Total</b>
Charles	12	107	119
Frederick	17	59	76
Washington	15	46	61
Harford	6	49	55
Cecil	25	20	45
Howard	2	36	38
Anne Arundel	22	5	27
Worcester	6	19	25
Wicomico	5	19	24
Carroll	12	4	16
Baltimore City	7	6	13
Baltimore	5	6	11
Somerset	2	6	8
Calvert	1	4	5
St. Mary's	1	4	5
Kent	1	3	4
OUT OF STATE	0	4	4
Dorchester	2	2	4
Prince George's	1	3	4
Talbot	0	3	3
Montgomery	1	1	2
Queen Anne's	1	1	2
Caroline	1	0	1
<b>TOTAL</b>	<b>145</b>	<b>407</b>	<b>552</b>

FATMU Cases Received per Crime Type



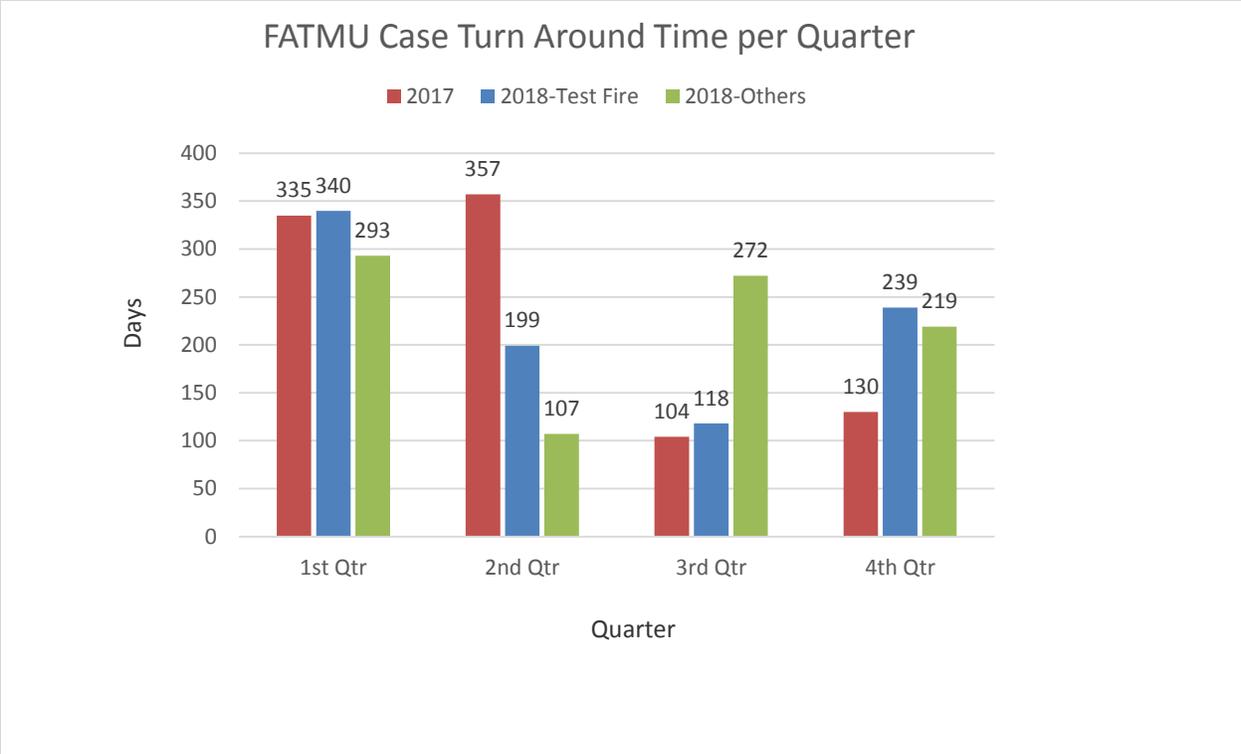


Note: Cases were not broken down by category prior to 2018. Test fire = operability with and without serial number restoration. Others = all other types including OTS and microscopic comparisons.

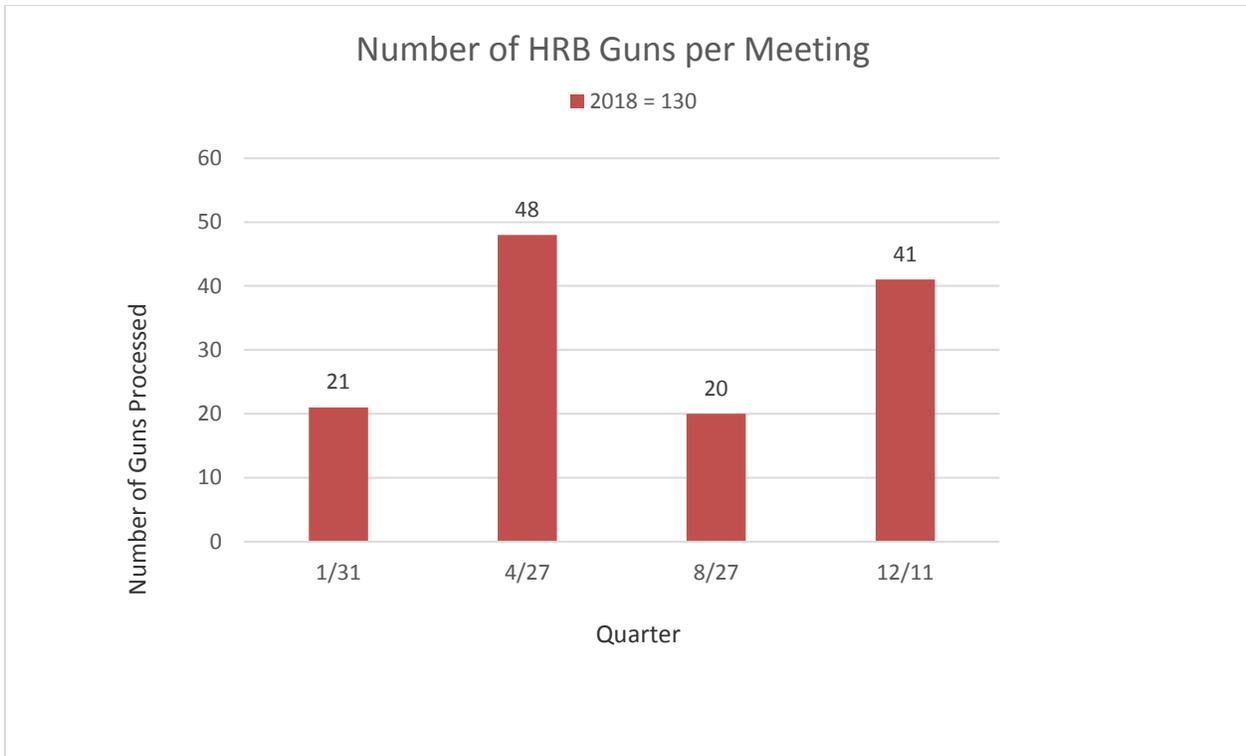
## FATMU Pending Caseload and Backlog per Quarter



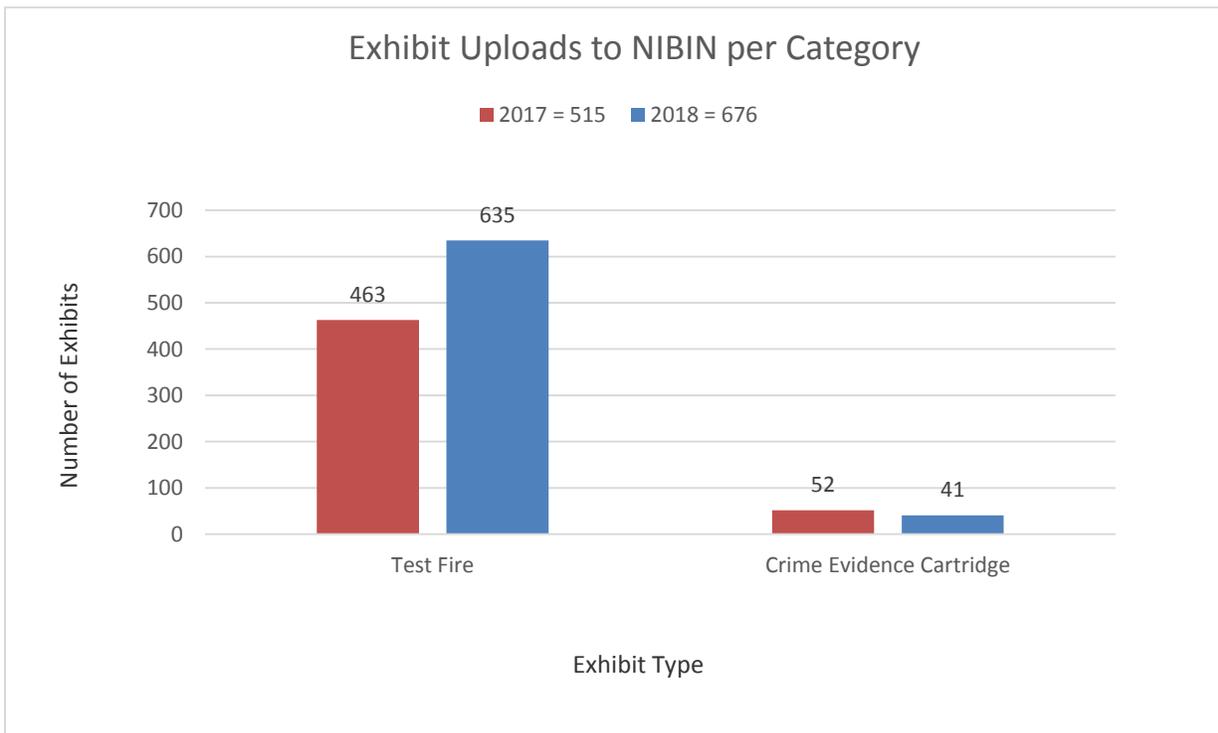
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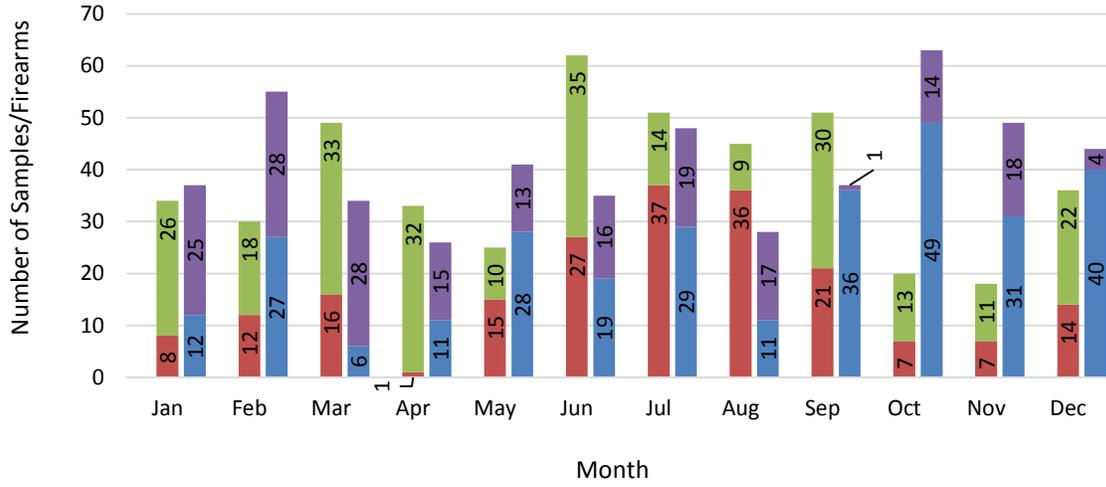


## **Firearms/Toolmarks Database Statistics**



## Operation Test Shot & Walk In Test Fire Activity

■ OTS 2017 = 201 Samples Entered into NIBIN      ■ WITF 2017 = 253 Firearms Processed  
■ OTS 2018 = 299 Samples Entered into NIBIN      ■ WITF 2018 = 198 Firearms Processed



<b>NIBIN Associations</b>			
<b>Associated Agencies</b>		<b>Number of Leads</b>	<b>Number of Confirmed Hits</b>
Charles Co. SO	VA - Hampton PD	6	0
MSP-Leonardtown	DC Metro PD	4	0
Frederick PD	Frederick PD	5	0
Frederick PD	Baltimore PD	2	1
MSP-Glen Burnie	Baltimore PD	2	1
MSP-Golden Ring	Baltimore PD	2	2
University of Maryland Eastern Shore	DC Metro PD	2	0
Charles Co. SO	VA - Newport New PD	1	0
Elkton PD	OH - ATF Cincinnati	1	1
Frederick PD	DC Metro PD	1	0
Harford Co. SO	DC Metro PD	1	0
Harford Co. SO	VA - Richmond DFS/Emporia PD	1	0
Howard Co. PD	Baltimore PD	1	1
MD Transportation Auth.	Baltimore PD	1	1
MSP-Easton	DE-New Castle PD (DSP)	1	0
Charles Co. SO	Prince George's Co. PD	1	1
	<b>Total</b>	<b>32</b>	<b>8</b>

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

## **NOTEWORTHY CASES**

On July 18, 2018 the LPIU received a mummified thumb from a deceased individual found during an excavation in Elkton. The thumb was the only digit on the body that contained friction ridge detail. Several methods were used without success at the Medical Examiner's Office and in the LPIU in attempts to record the ridge detail on the thumb. The LPIU was able to use a softening solution developed for use on mummies in Egypt to soften the outer layer of skin, clean the outer layer off and expose the clear ridge detail underneath. The thumb was able to be identified to the suspected individual.

On August 20, 2018 the Charles County Sheriff's Office arrested two individuals during a traffic stop. The occupants tried to flee the scene and discarded a firearm. They were quickly apprehended and the discarded firearm was recovered. This gun was processed and test fired by the Charles County Sheriff's Office evidence unit. The test fired cartridge cases and bullets were sent to FATMU where the cartridge cases were entered into the NIBIN database system. During the correlation phase of NIBIN processing, leads to six separate shootings in Virginia were developed. After contacting the Virginia law enforcement agency, it was discovered that one of the suspects had strong gang ties. This case is awaiting further investigation.

## **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 vacant Forensic Scientist Supervisor position, one Forensic Scientist Advanced, two Forensic Scientists III and two Forensic Scientists I. In addition, two Allied Forensic Scientists work in the CDS-Pikesville laboratory. One Allied Forensic Scientist is employed by the Howard County Police Department, and the other is employed by the Cecil County State's Attorney's Office.

The CDS-Berlin Unit consists of one Forensic Scientist Supervisor and two Forensic Scientists III. 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 vacant 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. 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 CDS Units submit monthly reports to the National Forensic Laboratory Information System (NFLIS) that document 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.

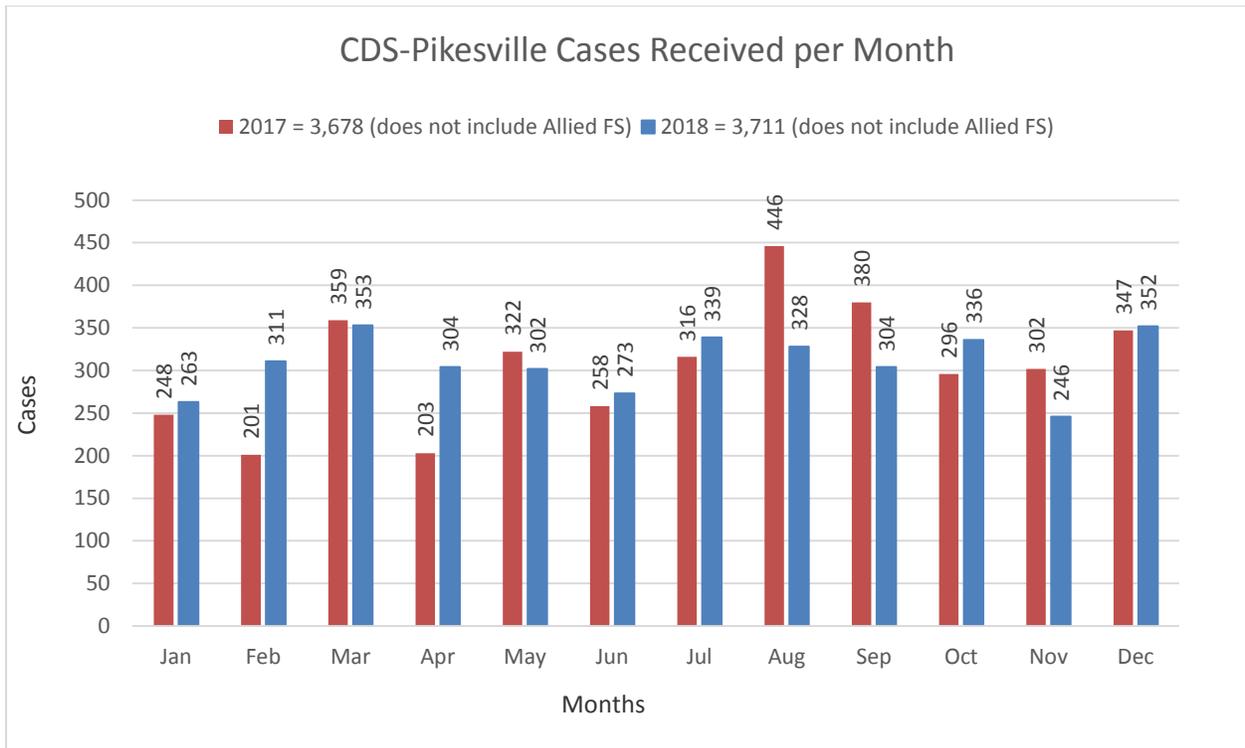
The CDS Units have transitioned to an electronic CDS worksheet and report format in StarLIMS. The ultimate goal is to have a paperless case file, and to be able to transmit CDS reports to the customer through an internet portal.

The 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. To meet this challenge, the CDS Units are planning to expand their testing capabilities with new instrumentation that will screen samples very efficiently and accurately. The units are also participating in a joint project with the National Institute of Standards and Technology (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.

## 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, 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).



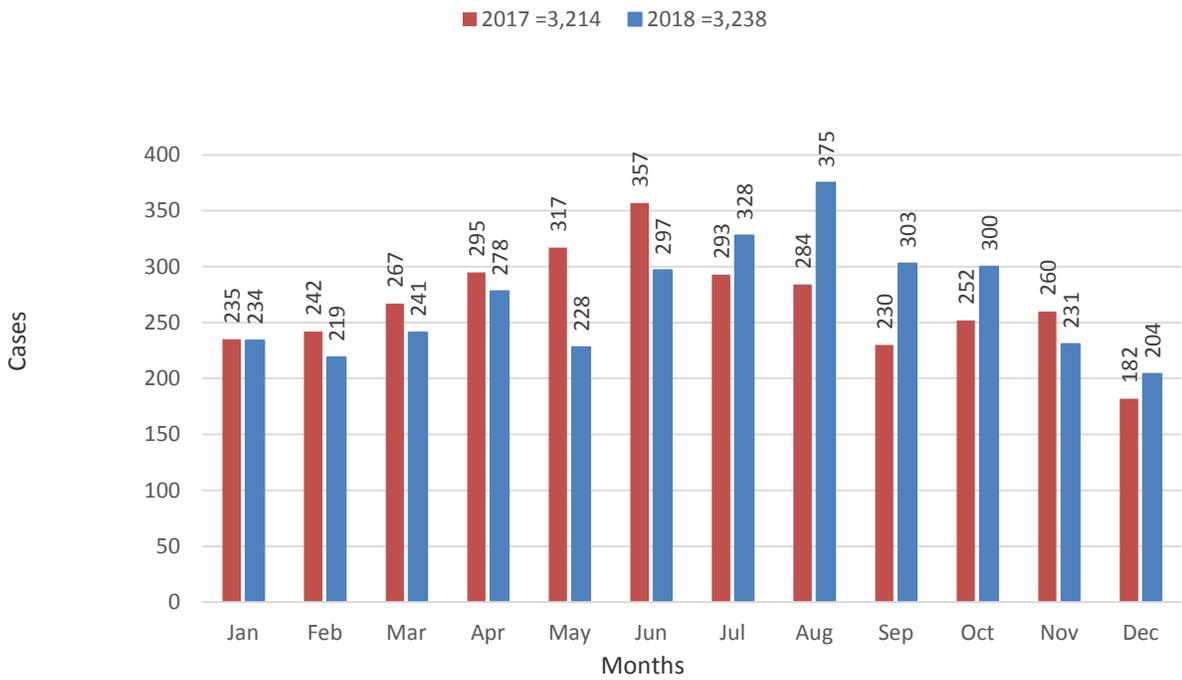
<b>CDS-Pikesville Cases Received per MSP Installation*</b>		
	<b>Counties Served</b>	<b>Submissions</b>
MSP-CID/CED	Statewide	172
MSP-Golden Ring	Baltimore	144
MSP-Leonardtown	St. Mary's	134
MSP-Westminster	Carroll	133
MSP-Prince Frederick	Calvert	131
MSP-Bel Air	Harford	71
MSP-Glen Burnie	Anne Arundel	70
MSP-La Plata	Charles	57
MSP-College Park	Prince George's	55
MSP-Forestville	Prince George's	50
MSP-JFK Hwy	Cecil, Harford, Baltimore	47
MSP-Annapolis	Anne Arundel	32
MSP-Centerville	Kent, Queen Anne's	9
MSP-Homicide	Statewide	2
MSP-Easton	Caroline, Dorchester, Talbot	1
	<b>TOTAL</b>	<b>1,108</b>

\* Does not include Allied FS

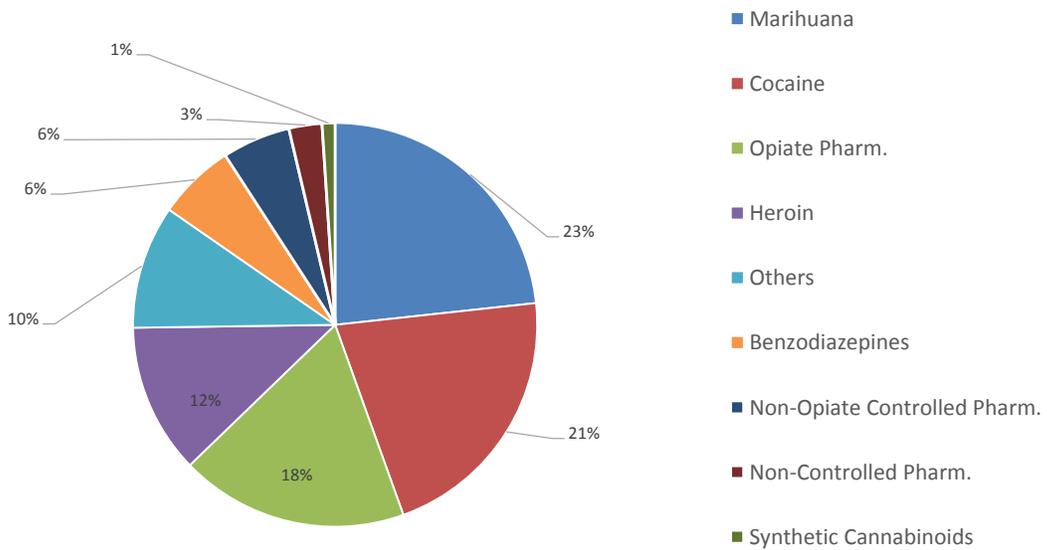
<b>Allied Agency Cases Received by CDS-Pikesville per County*</b>	
<b>County</b>	<b>Submissions</b>
Charles	594
Calvert	544
Harford	541
Carroll	332
St. Mary's	177
Baltimore City	152
Anne Arundel	111
Baltimore	61
Montgomery	26
Prince George's	25
Queen Anne's	22
Frederick	10
Kent	3
Allegany	1
Caroline	1
Cecil	1
Talbot	1
Washington	1
<b>TOTAL</b>	<b>2,603</b>

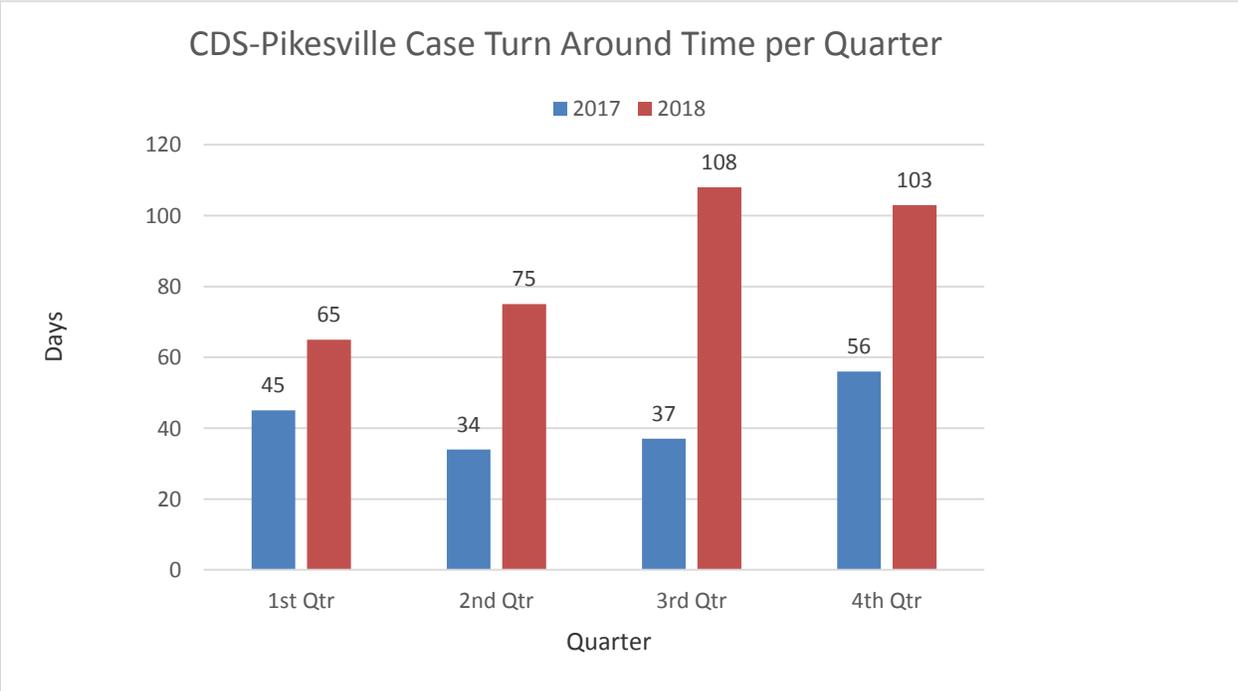
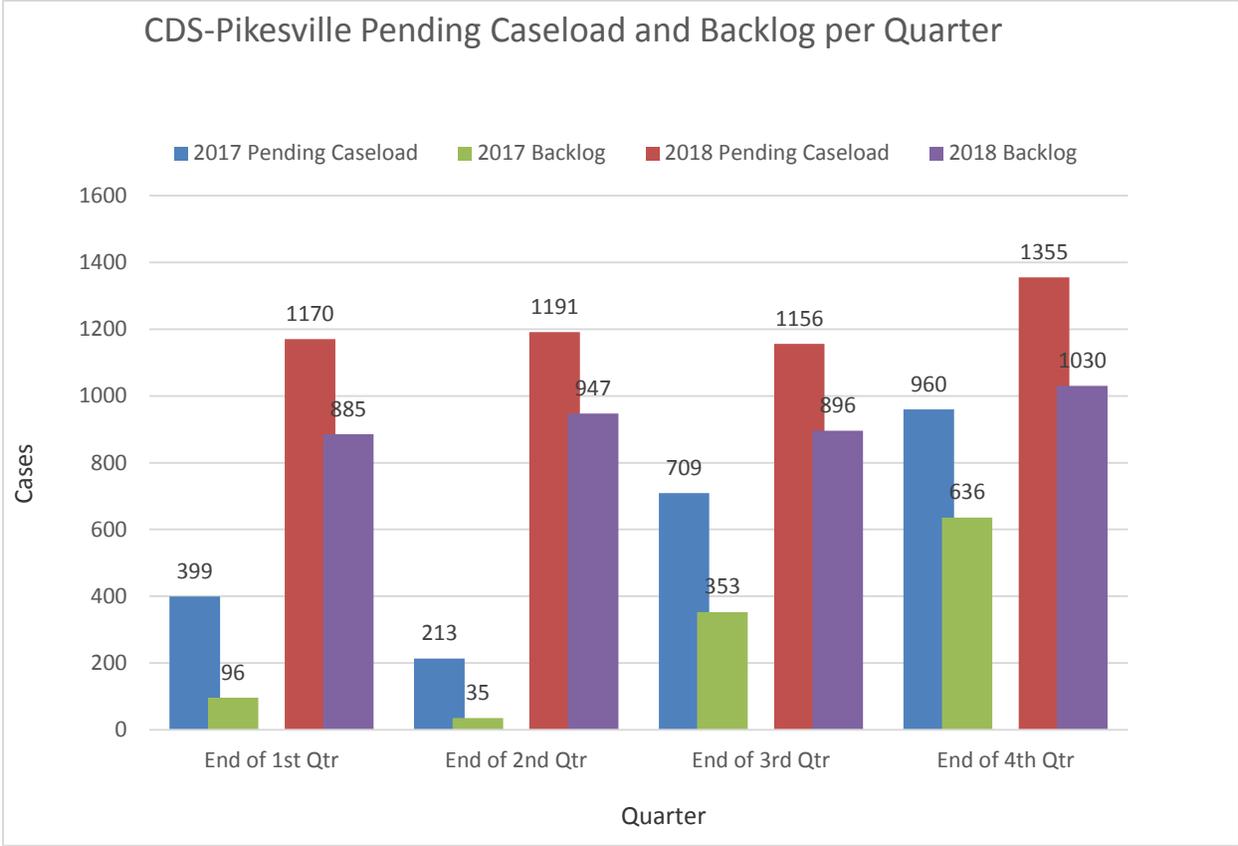
\* Does not include Allied FS

### CDS-Pikesville Cases Completed per Month



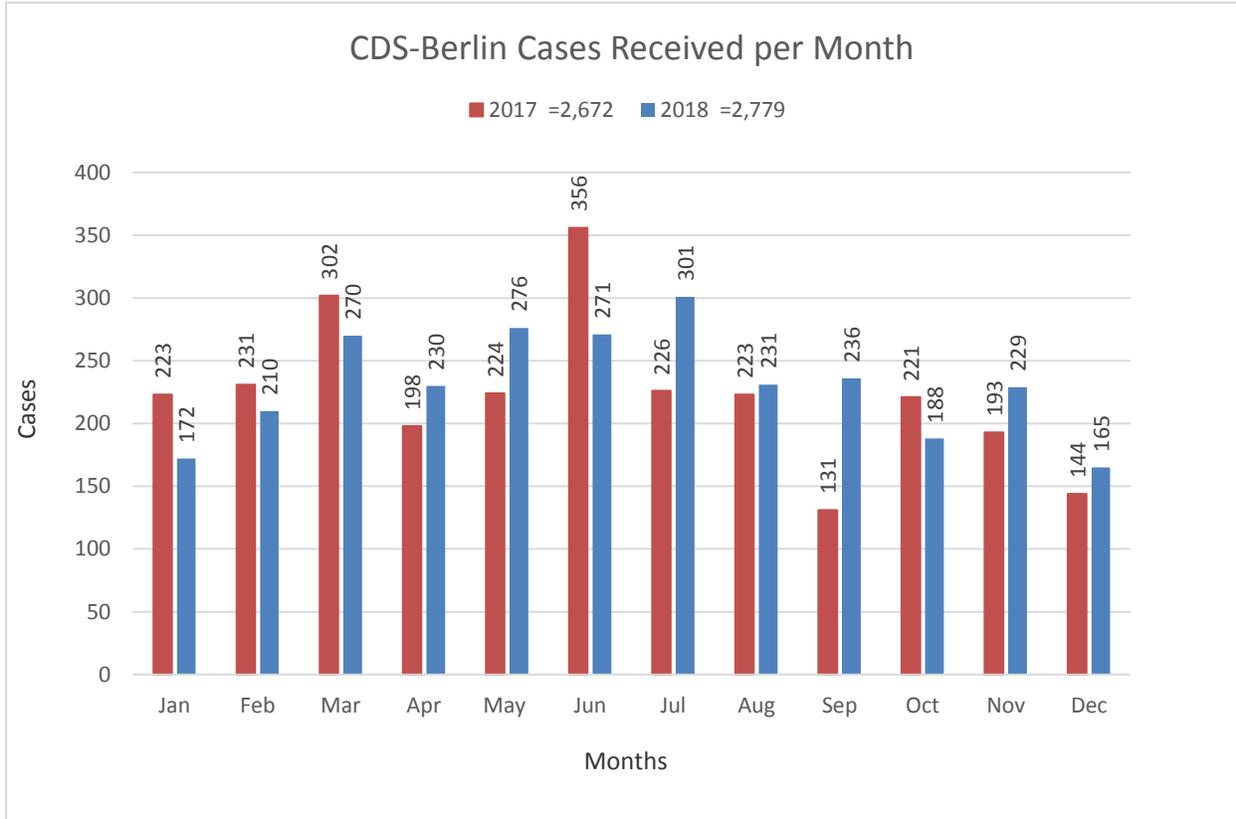
### CDS-Pikesville Analyses Reported per Drug Type (includes Allied FS)





## CDS-BERLIN UNIT

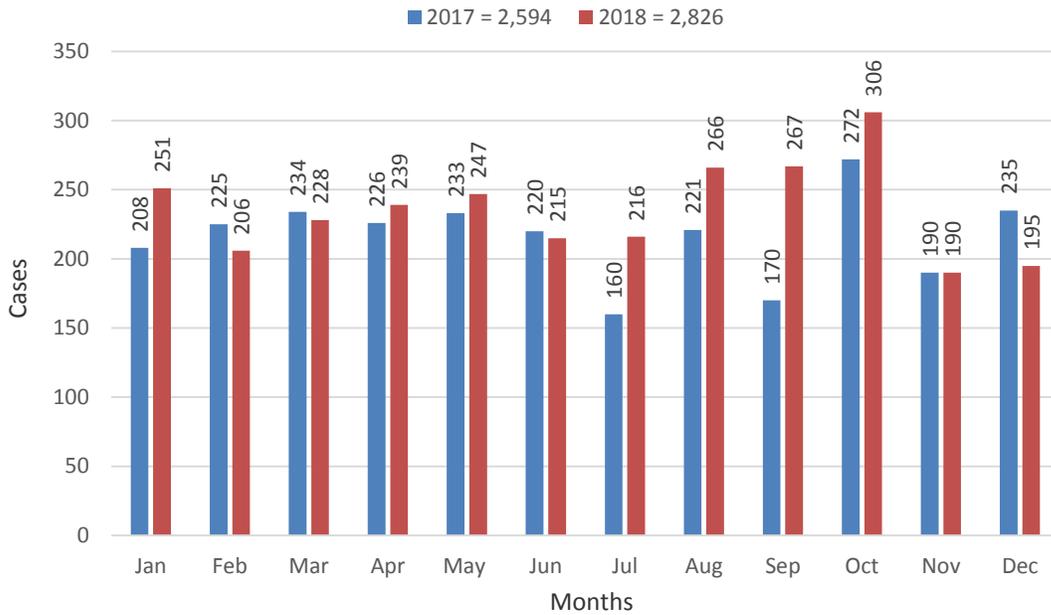
The CDS-Berlin laboratory services primarily the Eastern Maryland counties including Caroline County, Dorchester County, Kent County, Queen Anne’s County, Somerset County, Talbot County, Wicomico County, and Worcester County.



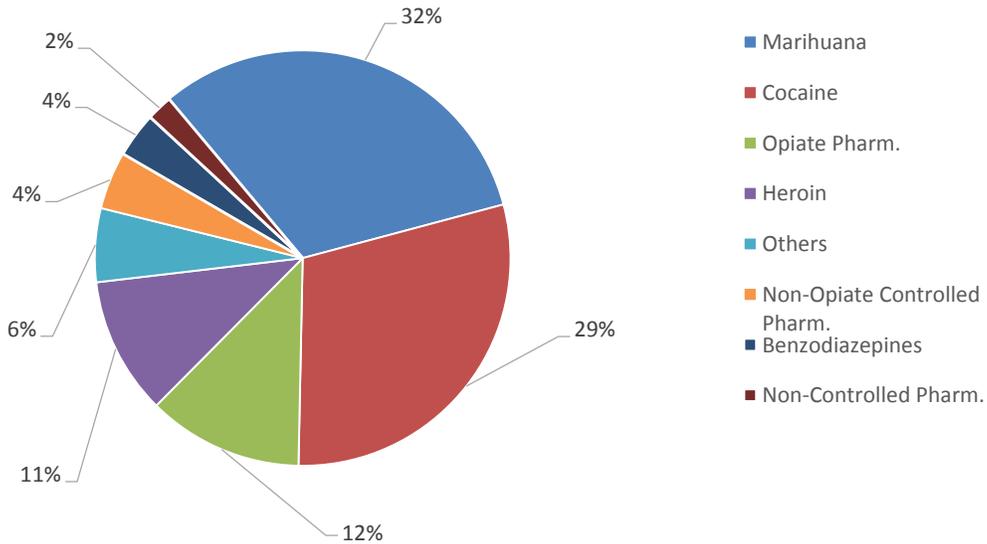
<b>CDS-Berlin Cases Received per MSP Installation</b>		
<b>MSP Installation</b>	<b>Counties Served</b>	<b>Submissions</b>
MSP-Easton	Caroline, Dorchester, Talbot	301
MSP-Centerville	Kent, Queen Anne's	229
MSP-Salisbury	Wicomico	174
MSP-Princess Anne	Somerset	59
MSP-Berlin	Worcester	52
MSP-Glen Burnie	Anne Arundel	12
MSP-CID/CED	Statewide	6
MSP-Annapolis	Anne Arundel	5
MSP-Homicide	Statewide	1
	<b>TOTAL</b>	<b>839</b>

<b>Allied Agency Cases Received by CDS-Berlin per County</b>	
<b>County</b>	<b>Submissions</b>
Wicomico	588
Worcester	477
Dorchester	274
Talbot	175
Queen Anne's	173
Caroline	85
Kent	84
Somerset	69
Anne Arundel	8
Out of State	4
Frederick	2
Montgomery	1
<b>TOTAL</b>	<b>1,940</b>

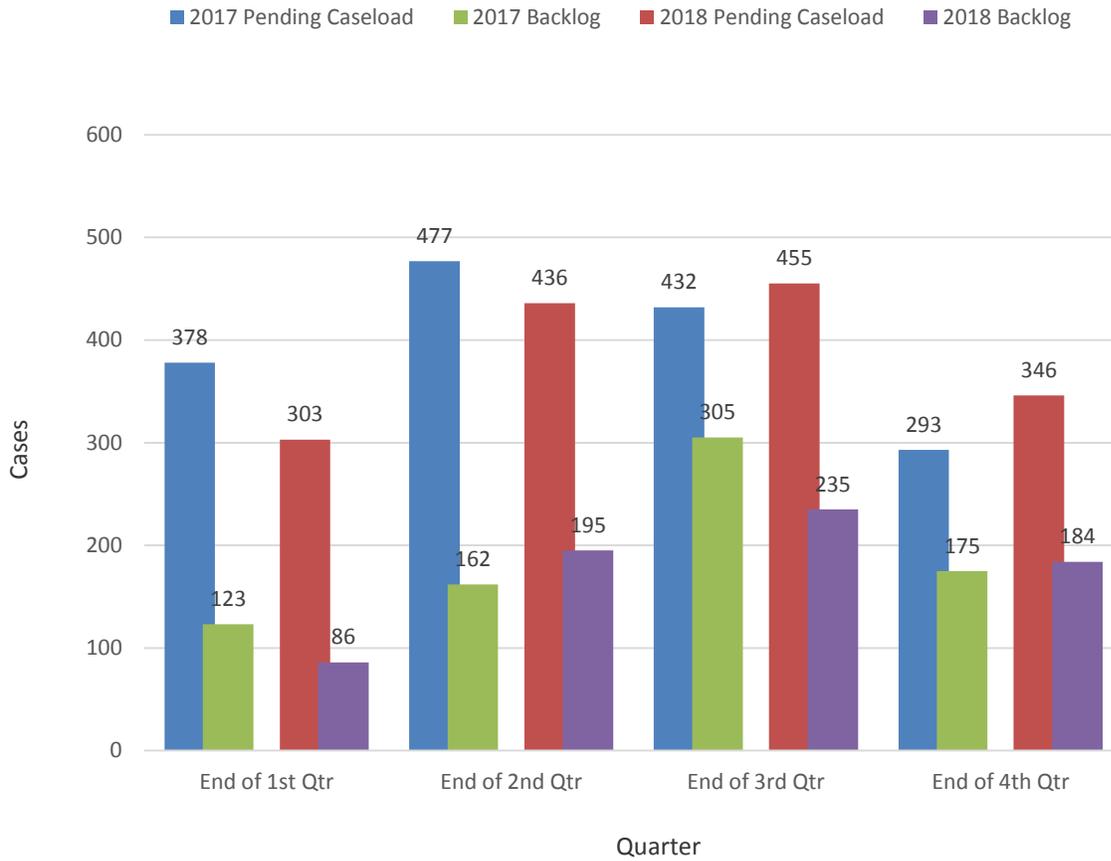
### CDS-Berlin Cases Completed per Month



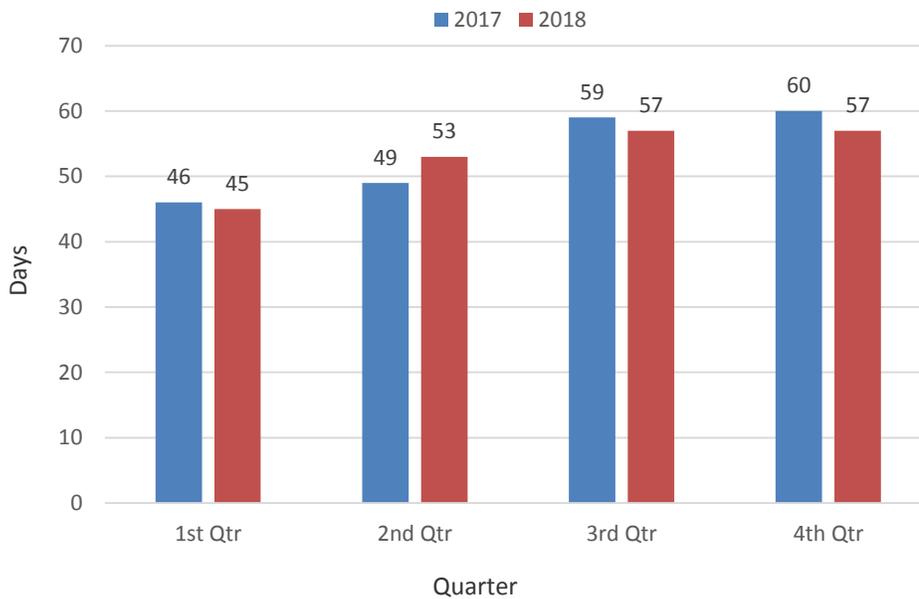
### CDS-Berlin Analyses Reported per Drug Type



### CDS-Berlin Pending Caseload and Backlog per Quarter



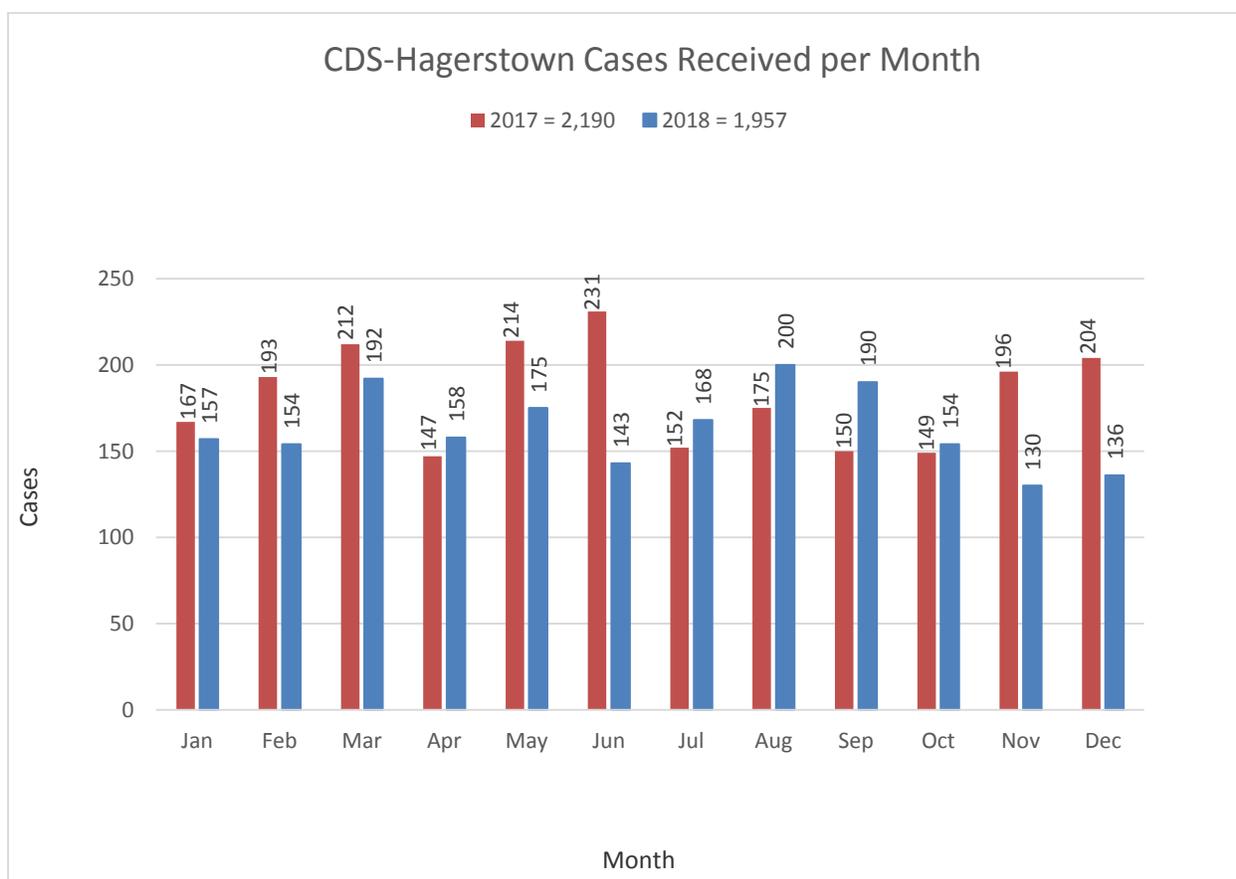
### CDS-Berlin Case Turn Around Time per Quarter



## CDS-HAGERSTOWN UNIT

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

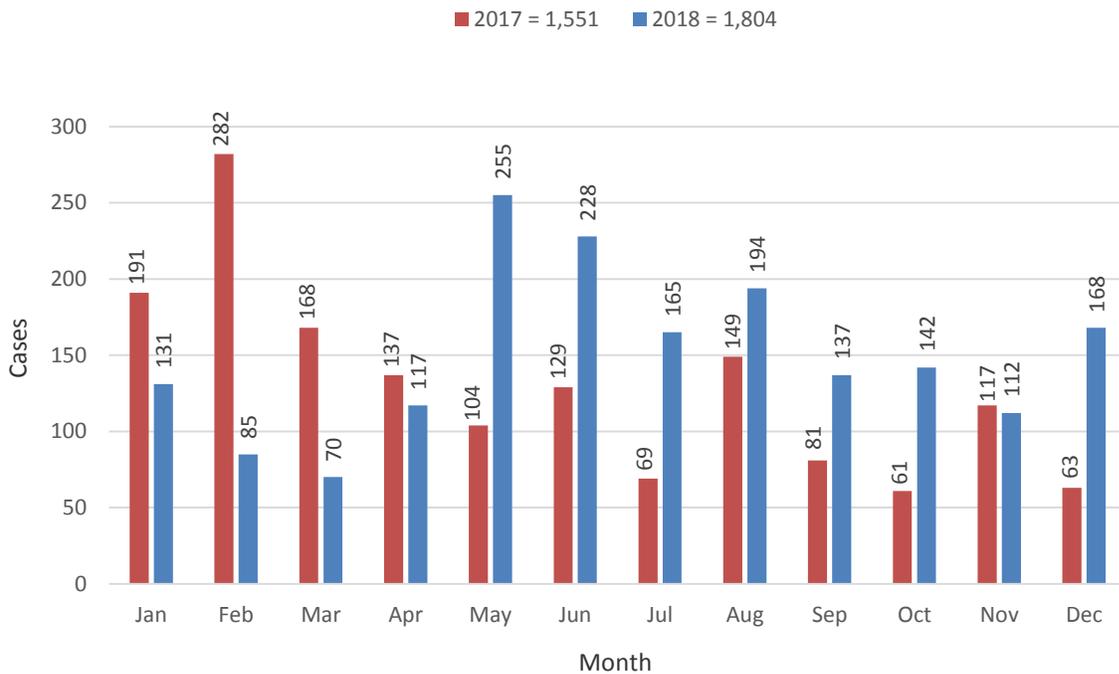
The Frederick County Allied Chemist position was filled in 2018, and the chemist has been in training. The CDS-Hagerstown Unit assumed the casework responsibilities and case backlog of that Allied Forensic Scientist while the chemist has been in training. The 2018 data shown below includes cases which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



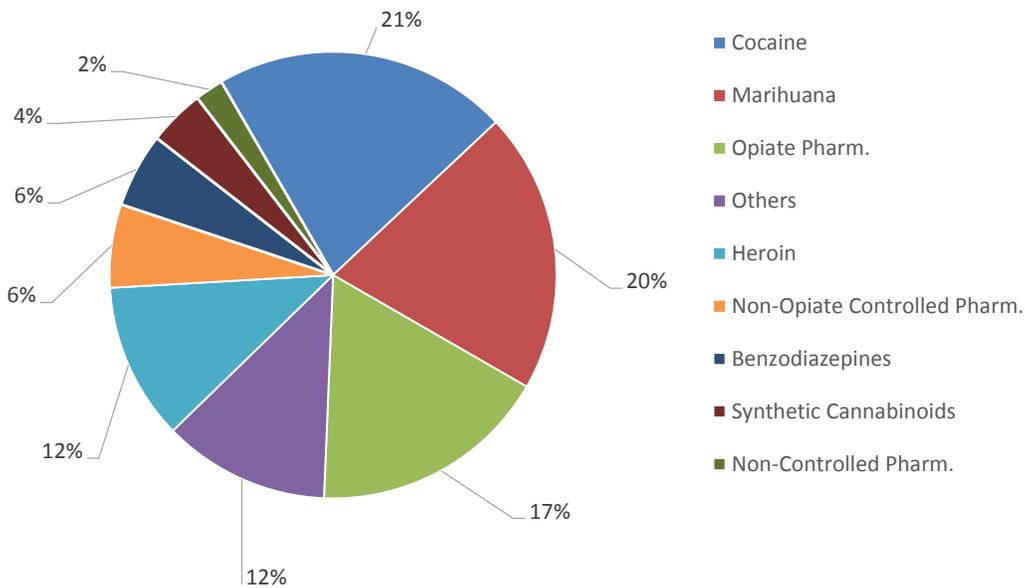
<b>CDS-Hagerstown Cases Received per MSP Installation</b>		
<b>MSP Installation</b>	<b>Counties Served</b>	<b>Submissions</b>
MSP- Cumberland	Allegany	202
MSP-Frederick	Frederick	124
MSP-Hagerstown	Washington	95
MSP-McHenry	Garrett	63
MSP-Rockville	Montgomery	21
MSP-CID/CED	Statewide	9
MSP-Annapolis	Anne Arundel	1
MSP-CVED	Statewide	1
MSP-DED/C3I	Statewide	1
	<b>TOTAL</b>	<b>517</b>

<b>Allied Agency Cases Received by CDS-Hagerstown per County</b>	
<b>County</b>	<b>Submissions</b>
Frederick	1,114
Allegany	225
Garrett	75
Washington	14
Out of State	12
<b>TOTAL</b>	<b>1,440</b>

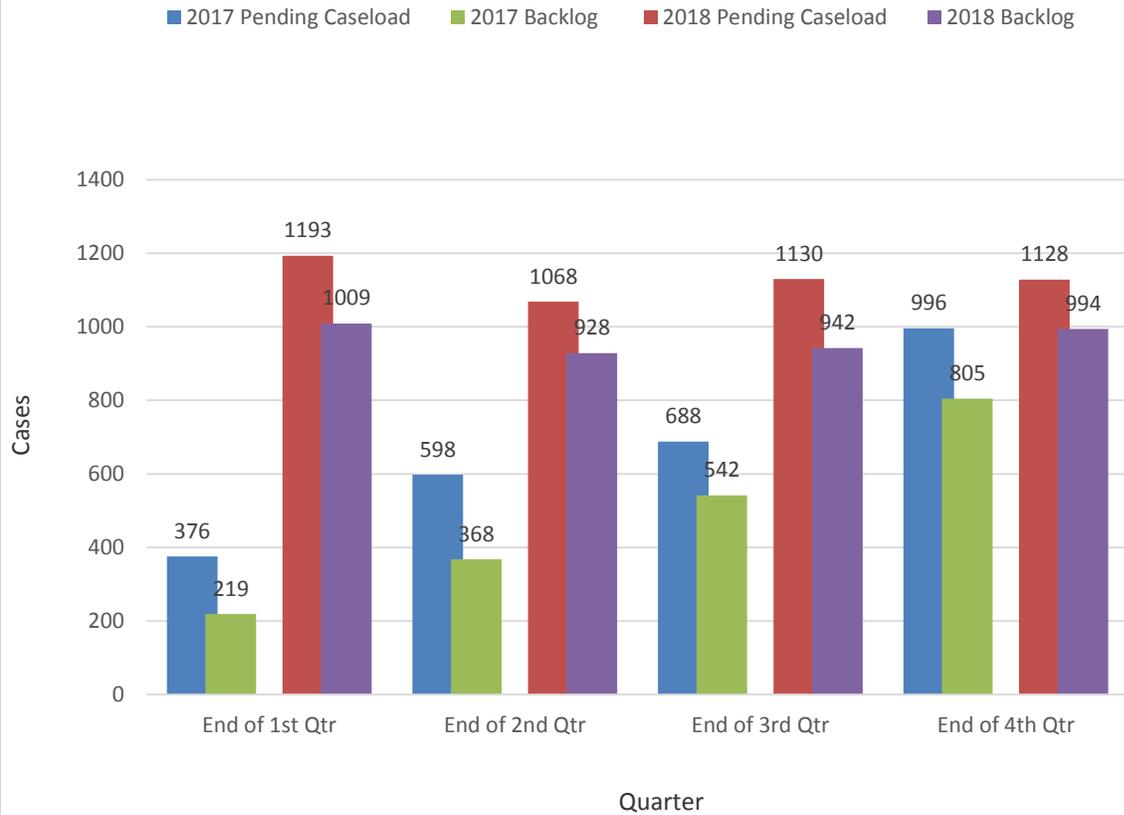
### CDS-Hagerstown Cases Completed per Month



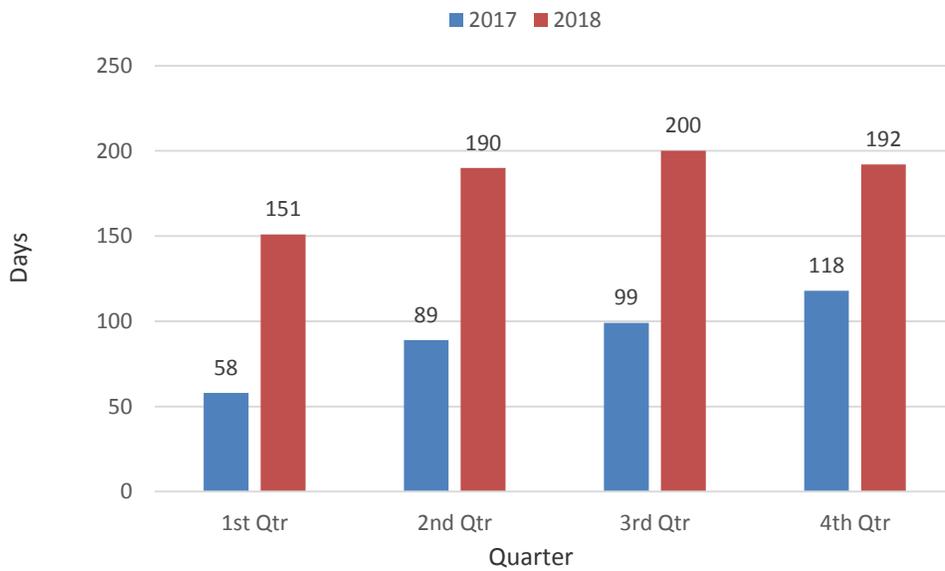
### CDS-Hagerstown Analyses Reported per Drug Type



### CDS-Hagerstown Pending Caseload and Backlog per Quarter



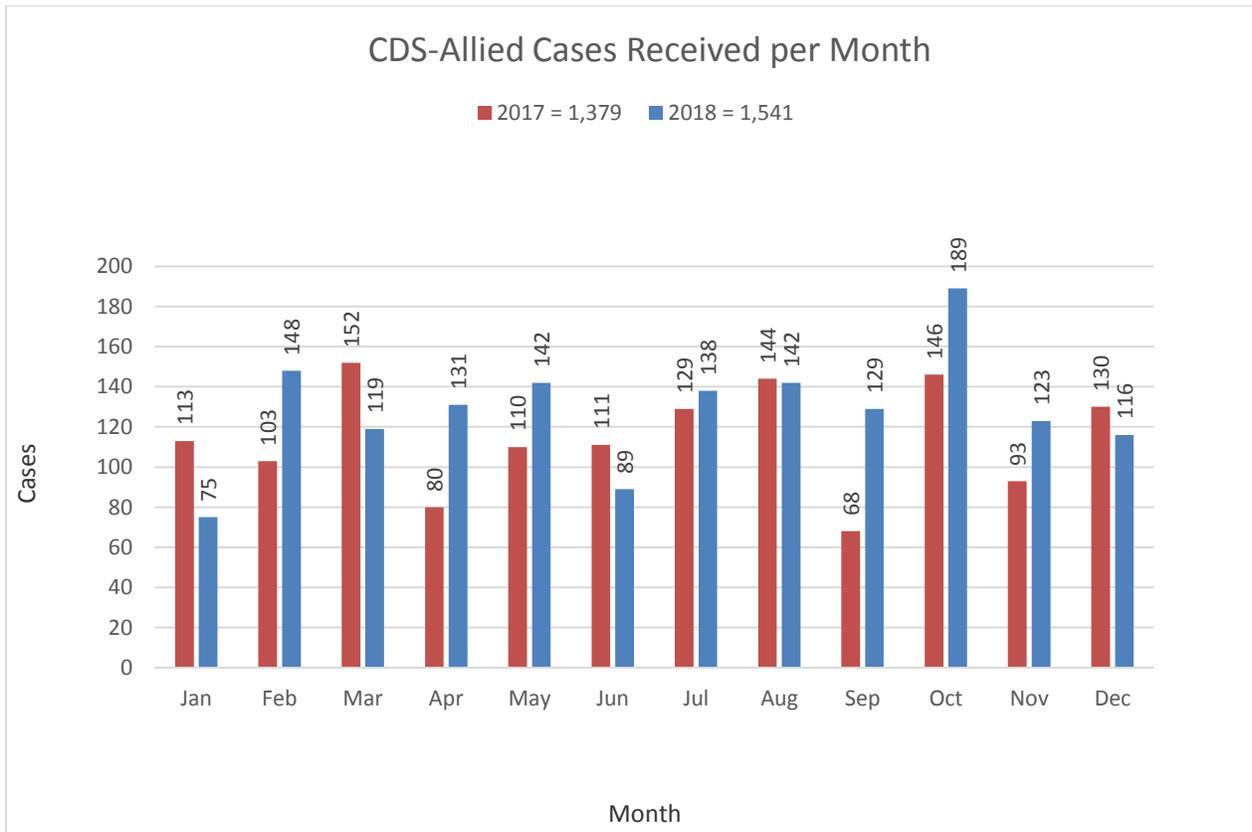
### CDS-Hagerstown Case Turn Around Time per Quarter



## CDS-ALLIED FORENSIC SCIENTIST PROGRAM

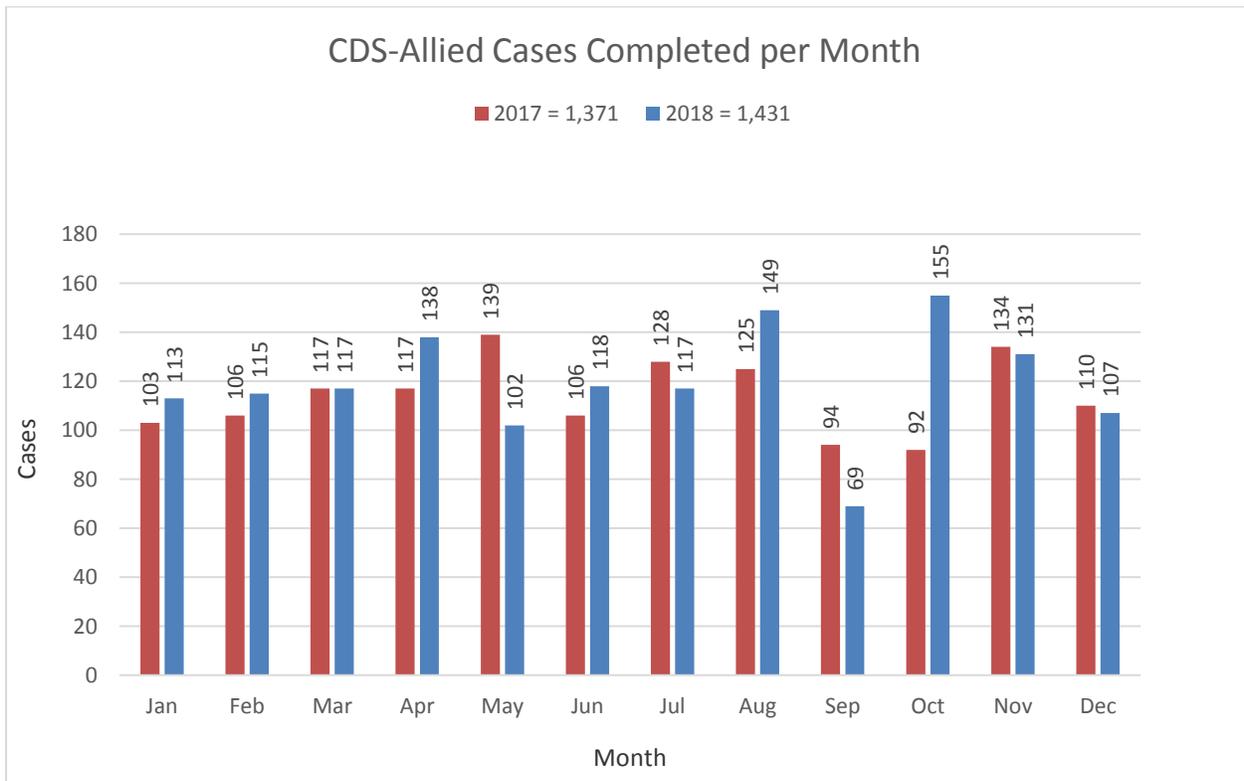
The Allied Forensic Scientists working in the CDS Units are employees of allied agencies or other governmental entities. These scientists are authorized to perform CDS analysis in FSD facilities under the provisions provided for in a Memorandum of Understanding. Even though these scientists are not MSP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

Three Allied Forensic Scientists, representing the following agencies, work in the CDS Units: Howard County Police Department, Cecil County State’s Attorney’s Office and Frederick County State’s Attorney’s Office. The Frederick County Allied Chemist position was filled in 2018, and the chemist has been in training. The CDS-Hagerstown Unit assumed the casework responsibilities and case backlog of that Allied Forensic Scientist. In this report, the Frederick County casework statistics are included under the CDS-Hagerstown Unit.

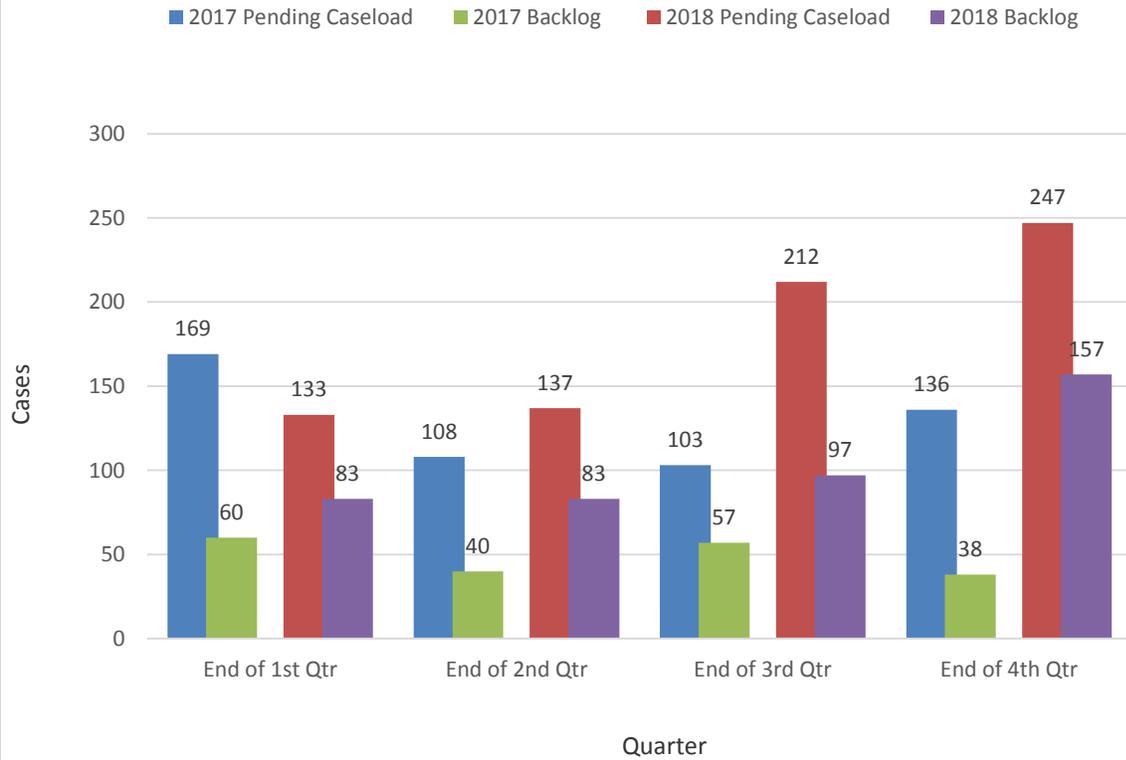


CDS Cases Received by Allied Forensic Scientists per MSP Installation		
MSP Installation	Counties Served	Submissions
MSP-North East	Cecil	246
MSP-CID/CED	Statewide	91
MSP-Waterloo	Howard	68
MSP-JFK Hwy	Cecil, Harford, Baltimore	39
	<b>TOTAL</b>	<b>444</b>

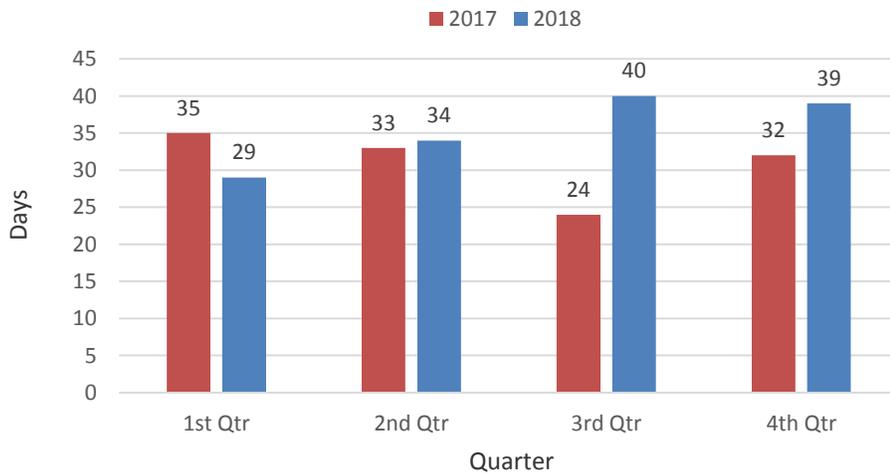
CDS Cases Received by Allied Forensic Scientists from Allied Agencies per County	
County	Submissions
Cecil	578
Howard	519
<b>TOTAL</b>	<b>1,097</b>



### CDS-Allied Pending Caseload and Backlog per Quarter



### CDS-Allied Case Turn Around Time per Quarter



## **TOXICOLOGY UNIT**

The Toxicology Unit is responsible for the analysis of alcohol and drugs contained in blood specimens submitted to the Maryland State Police Forensic Sciences Division. 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. Specimens submitted for testing are collected by certified medical personnel at the direction of authorized police personnel. Blood is collected when a person is injured or hospitalized, a fatality has occurred, or when alcohol is suspected and a breath test operator is not available. Many cases, therefore, involve serious personal injury and manslaughter charges that require the Forensic Scientist's expert testimony at trial.

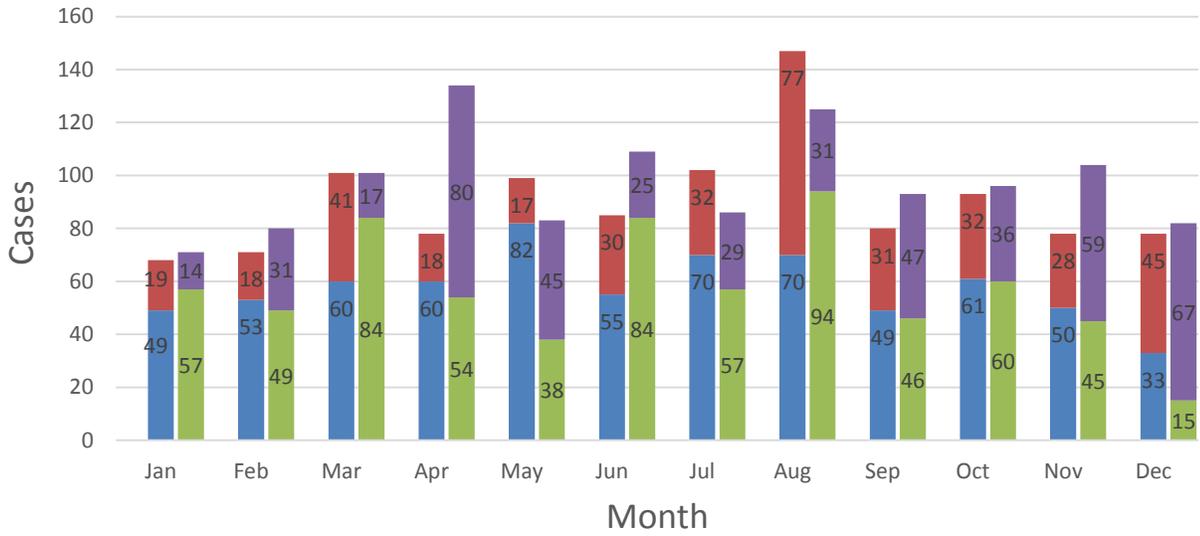
The Toxicology Unit was fully staffed for part of 2018 but had a Forensic Scientist I in training and then had a resignation in the third quarter of the year. The Unit continues to benefit from a contractual employee who assists with casework review.

In 2018, the Unit expanding their implementation of LC/MS/MS confirmation testing on benzodiazepines and zolpidem to include THC and its metabolites. This instrumentation has streamlined the testing and data analysis of these drug types. It is anticipated that the opioid panel of drugs including fentanyl will be confirmed with LC/MS/MS in 2019.

Due to the staffing and instrumental developments noted above, the blood alcohol and blood drug backlogs and turnaround time have stabilized in 2018.

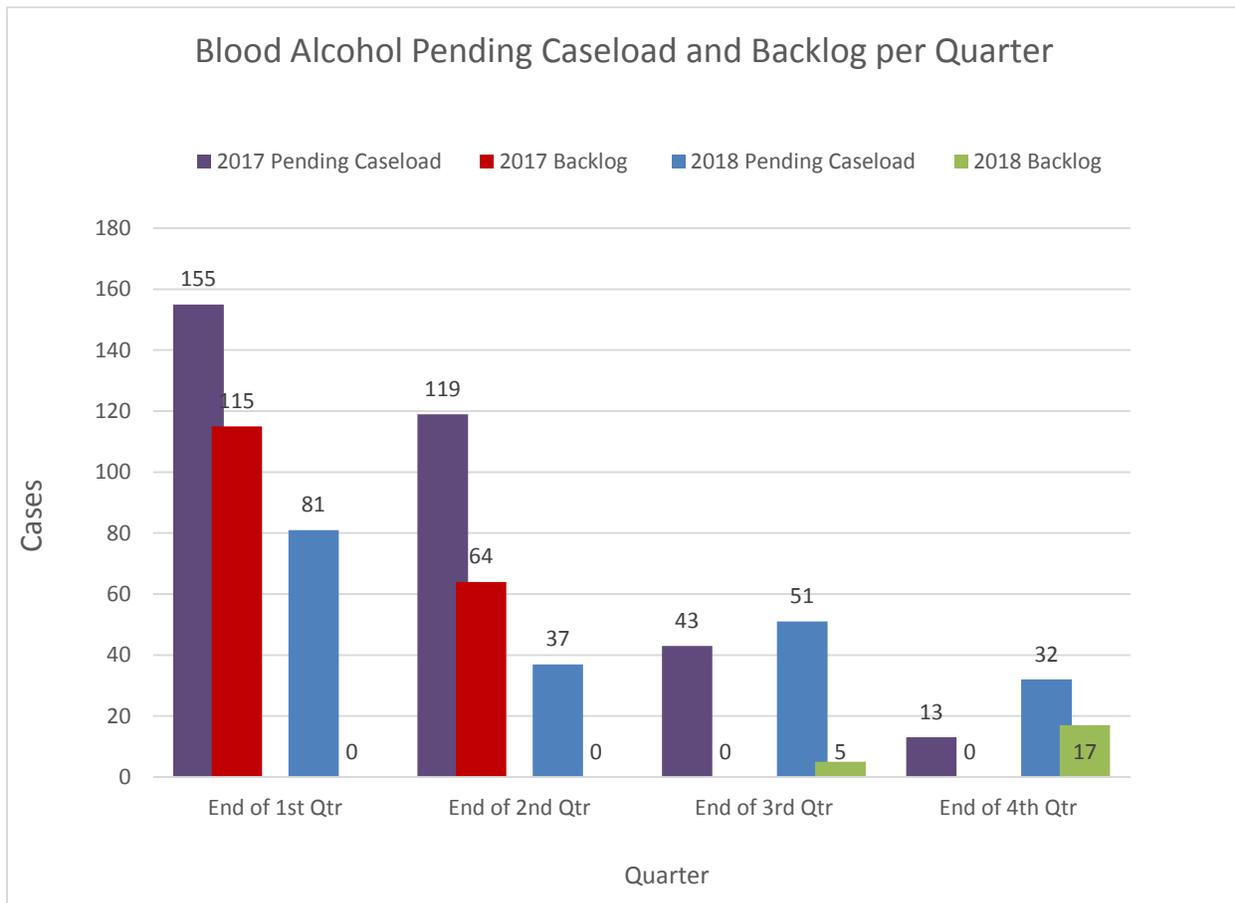
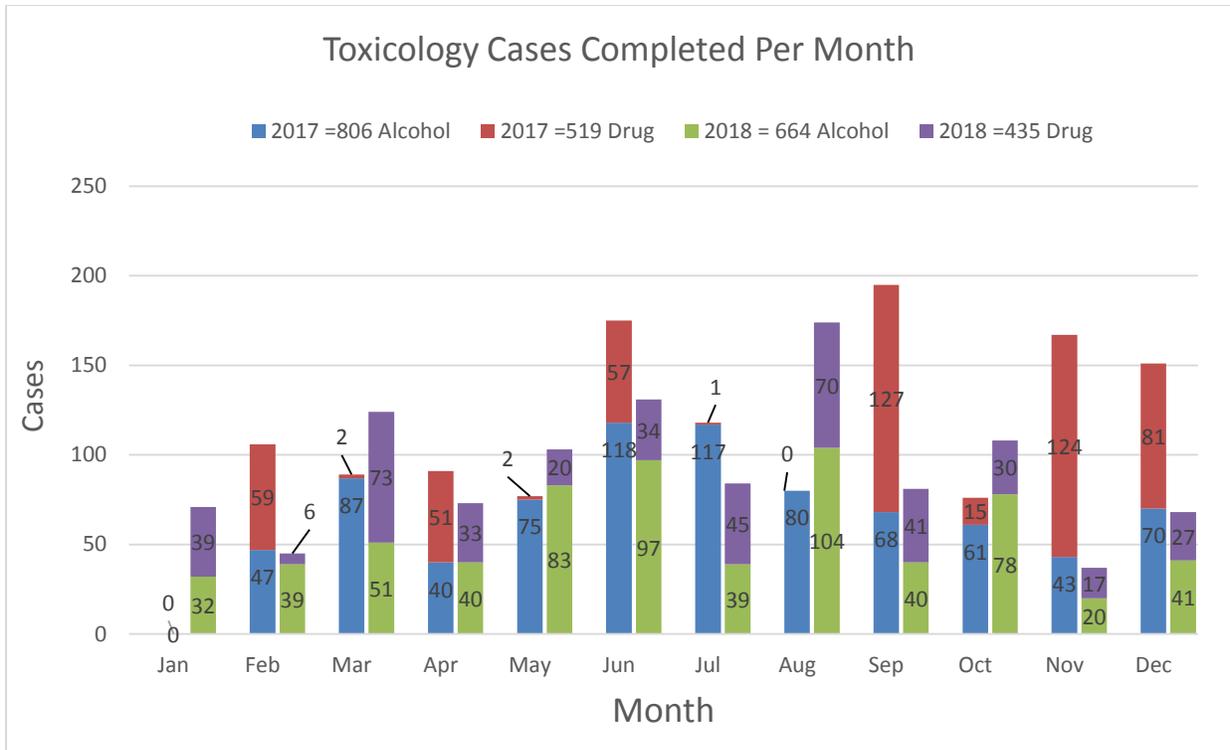
### Toxicology Cases Received Per Month

■ 2017 = 692 Alcohol ■ 2017 = 388 Drug ■ 2018 = 683 Alcohol ■ 2018 = 481 Drug

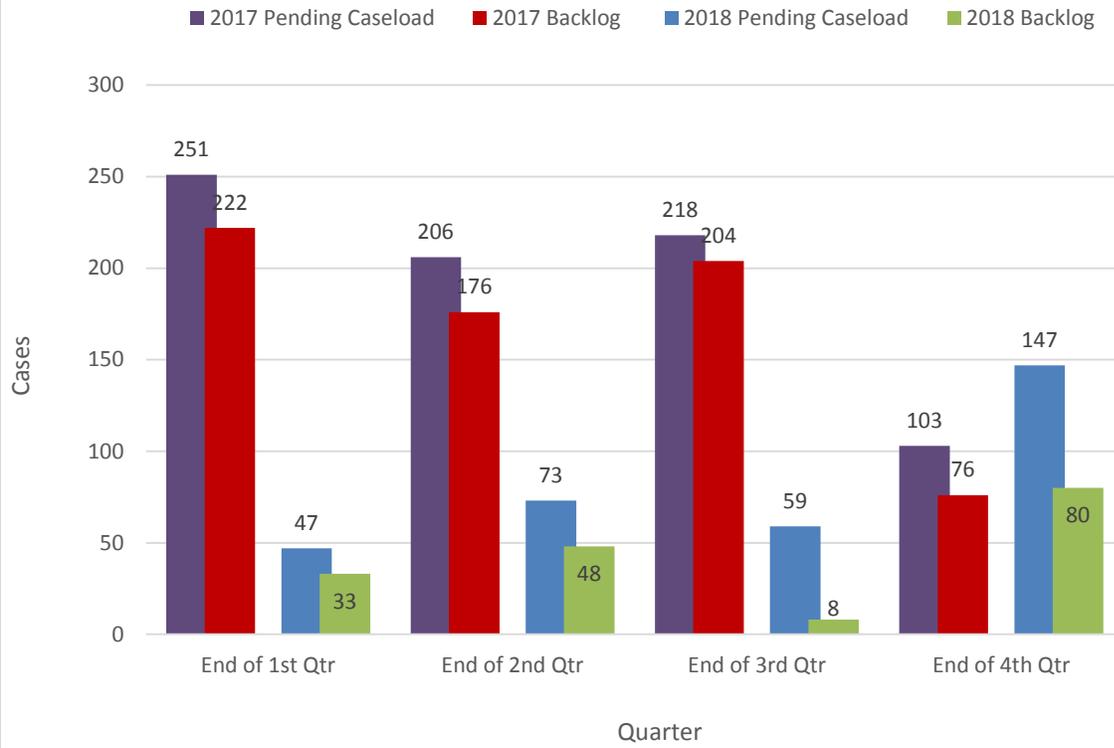


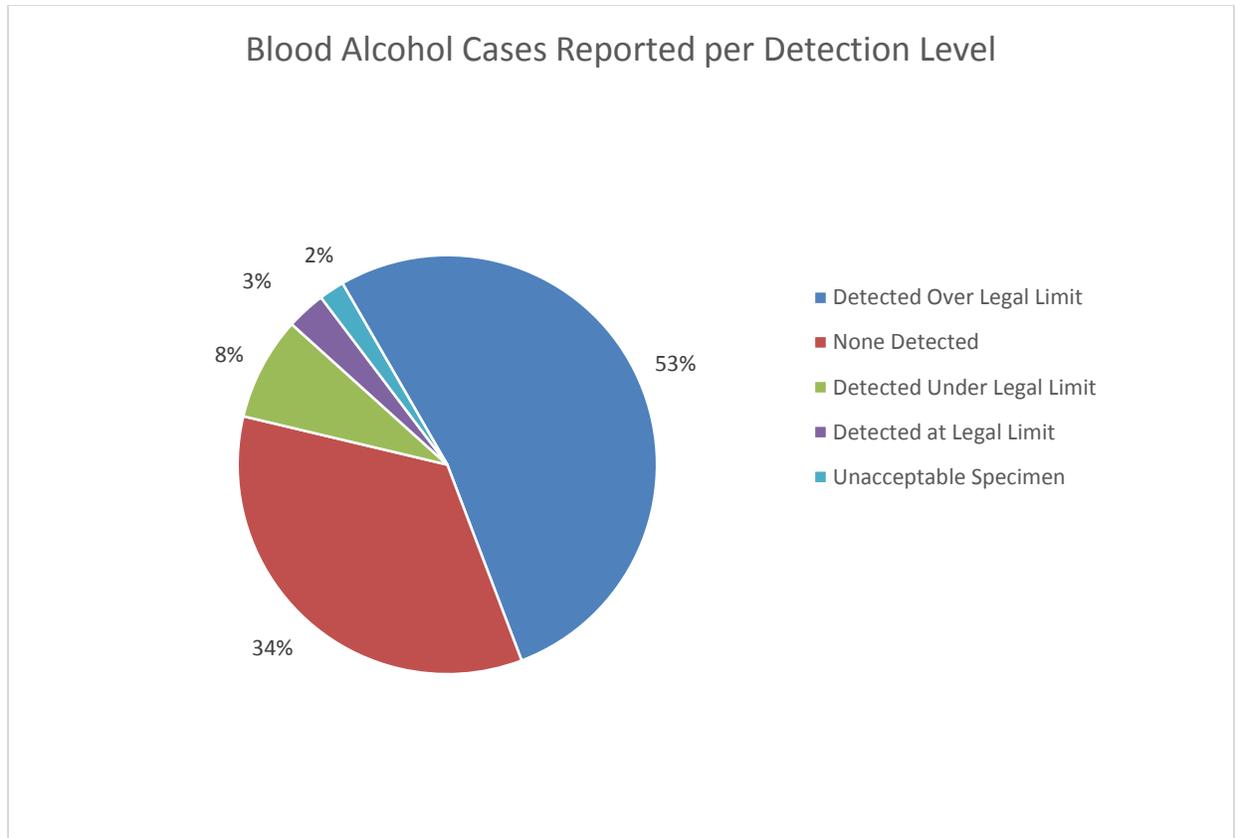
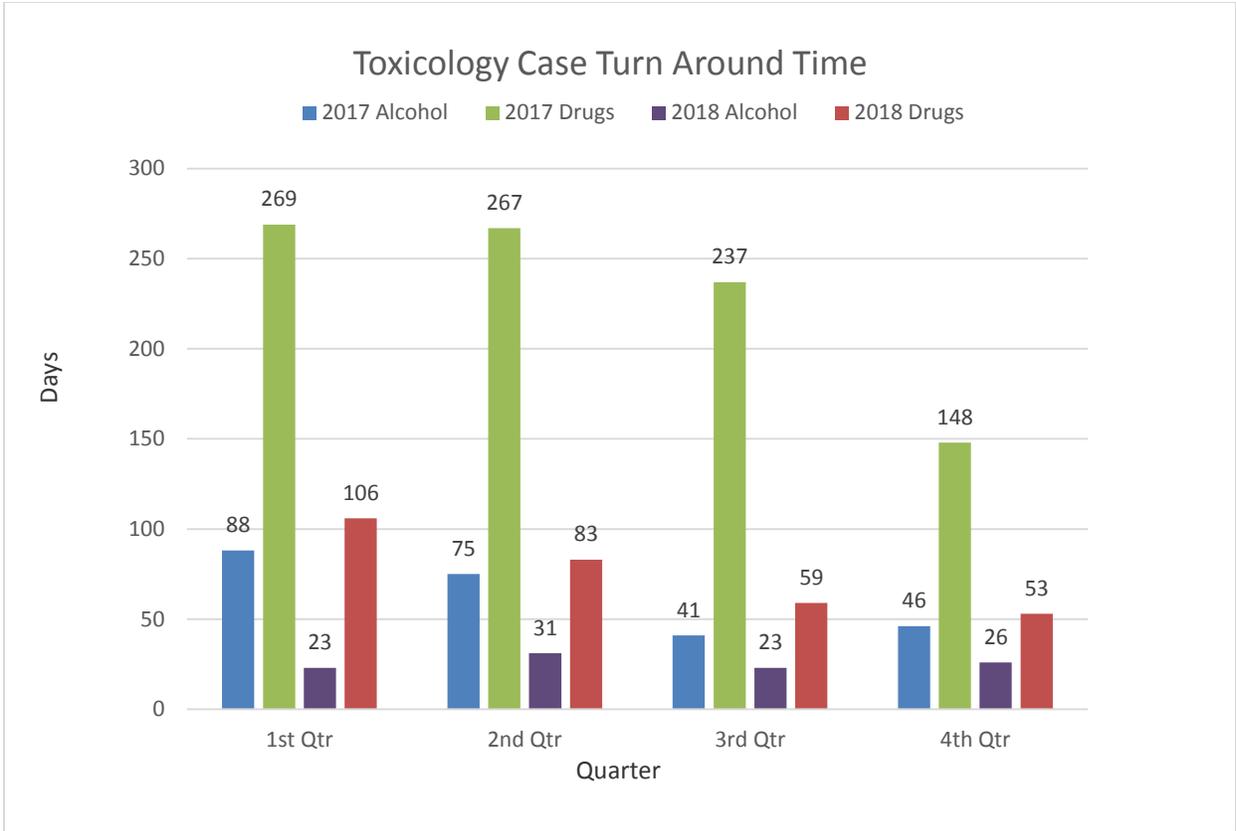
<b>Toxicology Cases Received per MSP Installation</b>		
<b>MSP Installation</b>	<b>Counties Served</b>	<b>Submissions</b>
MSP-Golden Ring	Baltimore	62
MSP-Bel Air	Harford	29
MSP-Easton	Caroline, Dorchester, Talbot	28
MSP-Frederick	Frederick	26
MSP-Hagerstown	Washington	23
MSP-Westminster	Carroll	21
MSP-Glen Burnie	Anne Arundel	21
MSP-La Plata	Charles	19
MSP-Forestville	Prince George's	16
MSP-Rockville	Montgomery	16
MSP-Salisbury	Wicomico	15
MSP-Waterloo	Howard	14
MSP-Centerville	Kent, Queen Anne's	14
MSP-College Park	Prince George's	13
MSP-Leonardtown	St. Mary's	13
MSP-Prince Frederick	Calvert	13
MSP-Berlin	Worcester	11
MSP-North East	Cecil	10
MSP-JFK Hwy	Cecil, Harford, Baltimore	10
MSP-Annapolis	Anne Arundel	8
MSP- Cumberland	Allegany	4
MSP-McHenry	Garrett	2
MSP-Princess Anne	Somerset	1
	<b>TOTAL</b>	<b>389</b>

<b>Toxicology Cases Received from Allied Agencies by County</b>	
<b>County</b>	<b>Submissions</b>
Baltimore	166
Anne Arundel	133
Montgomery	75
Frederick	53
Howard	44
Washington	37
Prince Georges	36
Calvert	34
Allegany	31
Baltimore City	28
Harford	27
Carroll	25
Charles	15
St. Mary's	15
Cecil	11
Worcester	11
Wicomico	10
Garrett	5
Not Determined	4
Caroline	3
Kent	3
Queen Anne's	3
Talbot	3
Dorchester	2
Statewide	1
<b>TOTAL</b>	<b>775</b>

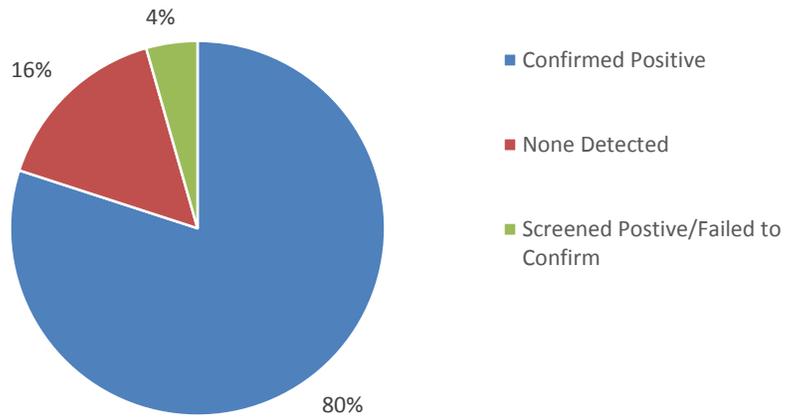


### Blood Drug Pending Caseload and Backlog per Quarter

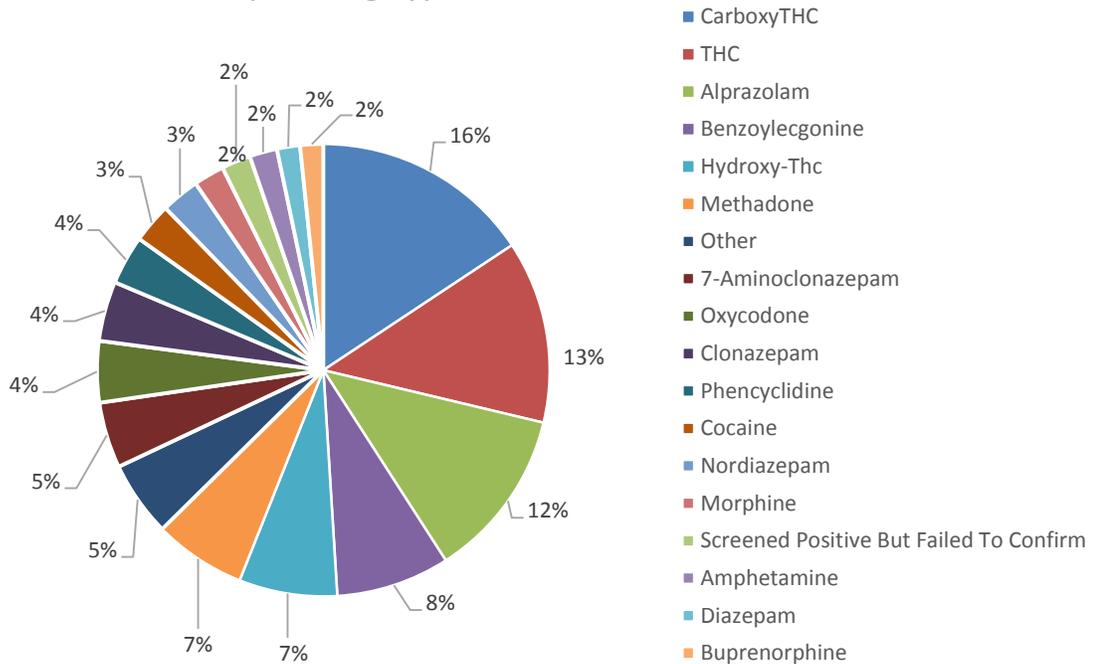




### Blood Drug Cases Reported per Result Type



### Confirmed Results of Blood Drug Cases Reported per Drug Type



## NOTEWORTHY CASES

The CDS Units had a submission from a Fire Department where they suspected that fentanyl syringes were tampered with in an ambulance. The syringes were pharmaceutical preparations of fentanyl. There were a set of three syringes that had some liquid removed, and these they had a high suspicion that they were tampered with. There were another set of four syringes that did not appear to have liquid removed, and the investigators were not sure if these were tampered with or not, but they wanted them tested. A sealed vial of fentanyl that was the same concentration as the syringes was submitted as a control sample. A scientist from NIST came to the lab to help the chemist sample the syringes and set up a method to compare the amount of fentanyl in the syringes to the amount of fentanyl in the control vial. The syringes had less fentanyl than the control samples, and the two sets of syringes did not have the same type of liquid. The second set of syringes had a liquid that dried down to an oily substance, which made them difficult to analyze. From this data, it does strongly suggest that the syringes were tampered with. However, the lab does not report out quantitatively so the chemist could only report that the syringes that should contain fentanyl had an insufficient amount of fentanyl for confirmation.

A chemist from the Toxicology Unit testified in court on a blood drug DUI (DUID) case. The defendant was a cancer survivor and had serious medical issues for which she was on several prescription medications (no illegal drugs). The case involved a crash. During the court proceedings, the chemist heard about the State Medical Advisory Board (MAB), a group of doctors that advise the MVA on an individual's physical/mental capability for driving. The defendant's driver's license was potentially going to be restricted due to this evaluation. The case emphasized that it is not just illicit drug use that can potentially cause driver impairment, and the importance of having a medical review board to evaluate a driver (in addition to them being subject to DUID charges and any sanctions/conditions required as a result).

## **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. 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, one Forensic Scientist III, and one Forensic Scientist I. The fifth position is a Forensic Inventory Control Officer. 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 I.

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

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 Scientists III. In addition, there is one vacancy for a Forensic Laboratory Technician I.

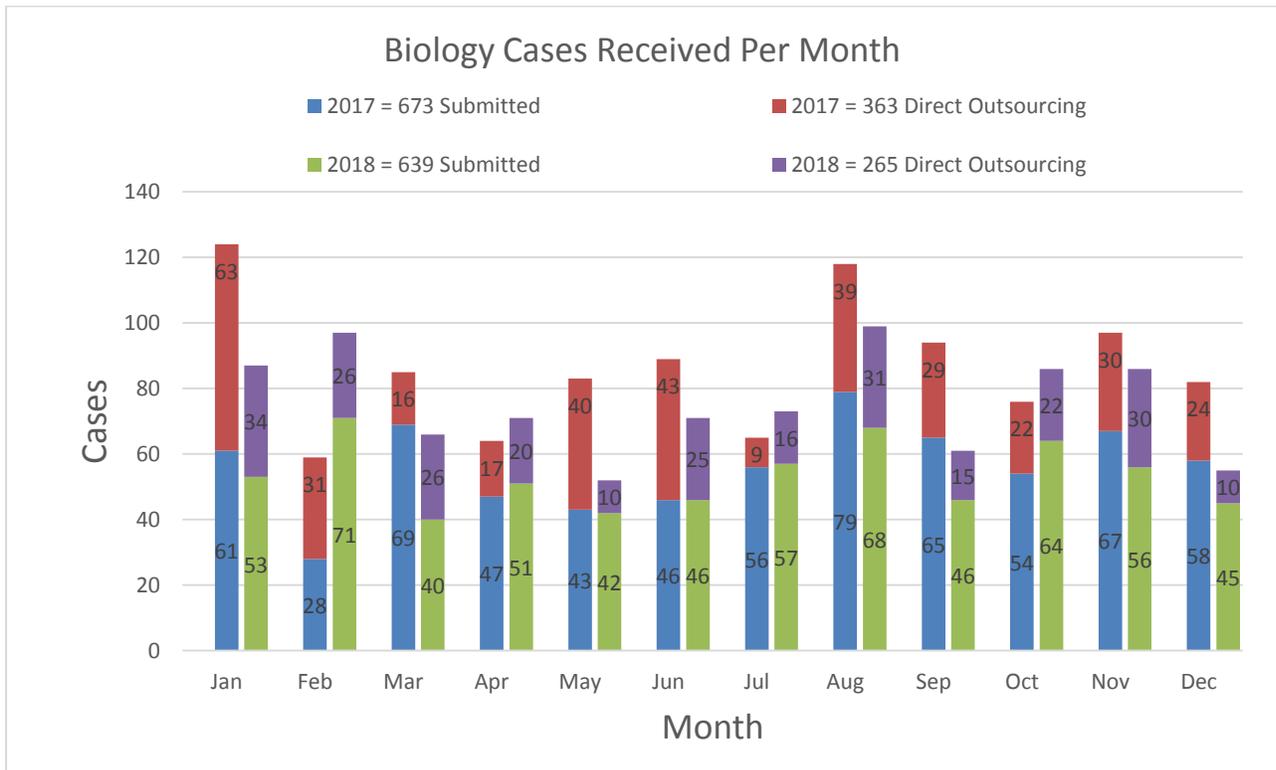
## **BIOLOGY CASEWORK UNITS**

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 2018. There were 639 cases received in the Biology Section, which is only a 5% decrease from 2017. There was a 28% decrease in the number of cases that were directly outsourced in 2018. Even though these cases were directly outsourced from the agency to the contract lab, they were still monitored and followed by Biology Section staff. Upon completion of such 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

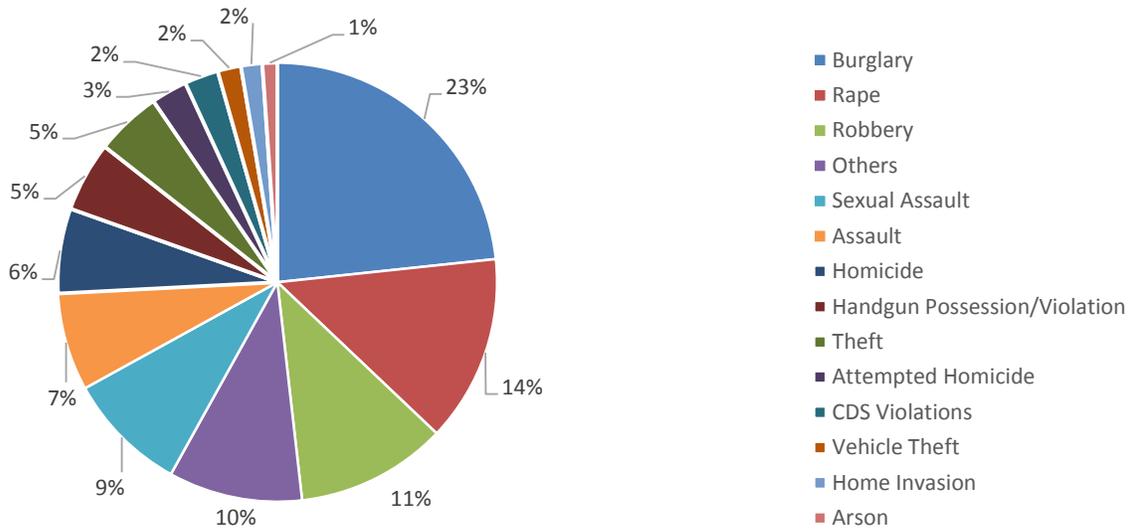
Biology Section decreased by 8.4% in 2018. By utilizing a combination of direct outsourcing, in-house outsourcing (evidence is received at FSD and then either the entire case or a portion of it is forwarded to a contracted laboratory for analysis), and in-house casework, the casework units have been able to continue to monitor and maintain the backlog at manageable levels.



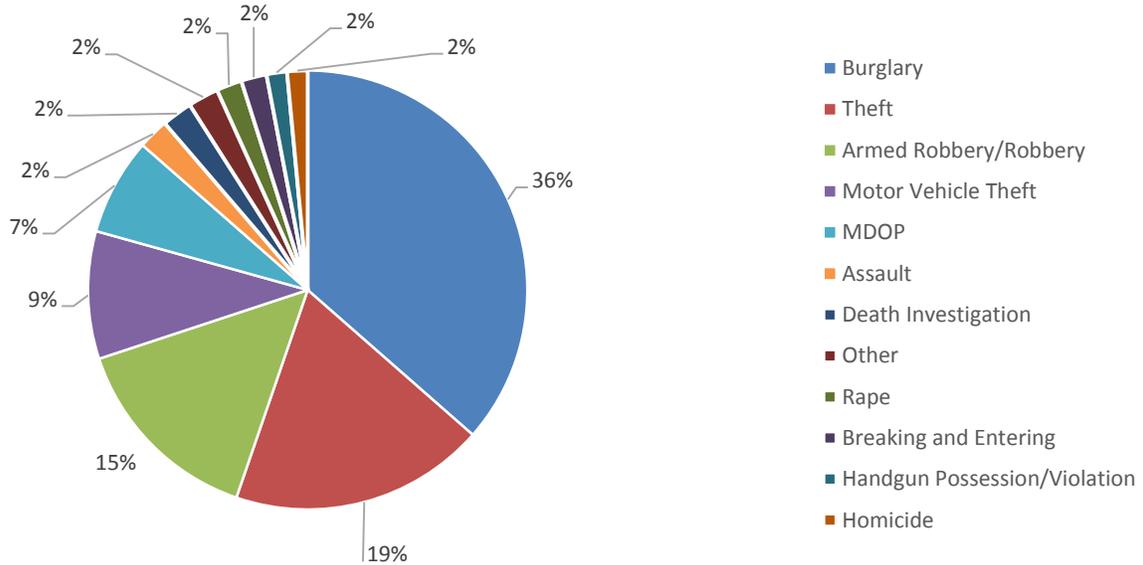
<b>Biology Cases Received per MSP Installation</b>				
<b>MSP Installation</b>	<b>Counties Served</b>	<b>Case Type</b>		
		Submitted	Directly Outsourced	Combined
MSP-CID/CED	Statewide	45	1	46
MSP-Princess Anne	Somerset	12	0	12
MSP-DED/C3I	Statewide	11	0	11
MSP-Homicide	Statewide	8	0	8
MSP-Easton	Caroline, Dorchester, Talbot	7	0	7
MSP-Frederick	Frederick	6	0	6
OSFM	Statewide	6	0	6
MSP-Salisbury	Wicomico	6	0	6
MSP-Golden Ring	Baltimore	5	0	5
MSP-North East	Cecil	4	1	5
MSP-Westminster	Carroll	5	0	5
MSP-Leonardtown	St. Mary's	3	0	3
MSP-Bel Air	Harford	2	0	2
MSP-College Park	Prince George's	2	0	2
MSP-Berlin	Worcester	1	0	1
MSP-Centerville	Kent, Queen Anne's	1	0	1
MSP-Crash Team	Statewide	1	0	1
MSP-Hagerstown	Washington	1	0	1
MSP-McHenry	Garrett	1	0	1
MSP-La Plata	Charles	1	0	1
	<b>TOTAL</b>	<b>128</b>	<b>2</b>	<b>130</b>

<b>Allied Agency Cases Received by Biology per County</b>			
<b>County</b>	<b>Case Type</b>		
	Submitted	Directly Outsourced	Combined
Charles	76	127	203
Wicomico	77	3	80
Frederick	48	18	66
Harford	59	5	64
St. Mary's	22	32	54
Anne Arundel	17	31	48
Cecil	44	1	45
Washington	26	14	40
Worcester	17	22	39
Carroll	22	6	28
Dorchester	22	1	23
Queen Anne's	18	1	19
Prince George's	17	0	17
Talbot	14	1	15
Calvert	11	0	11
Caroline	6	0	6
Somerset	6	0	6
Baltimore City	3	0	3
Garrett	3	0	3
Kent	1	1	2
Allegany	1	0	1
Baltimore	1	0	1
<b>TOTAL</b>	<b>511</b>	<b>263</b>	<b>774</b>

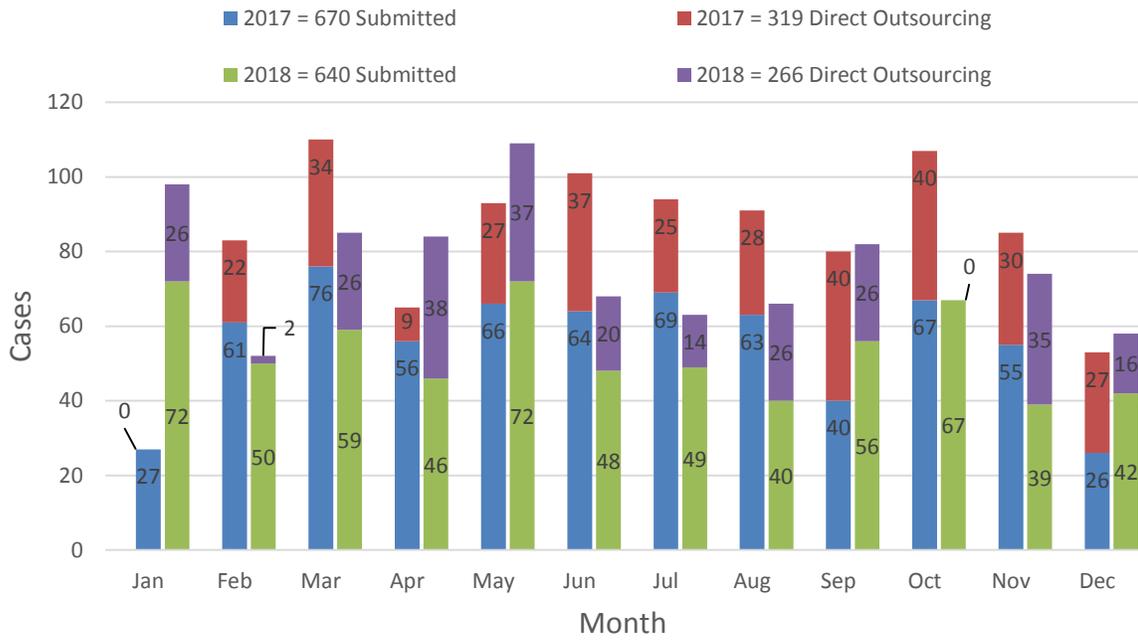
Submitted Biology Cases Received per Crime Type



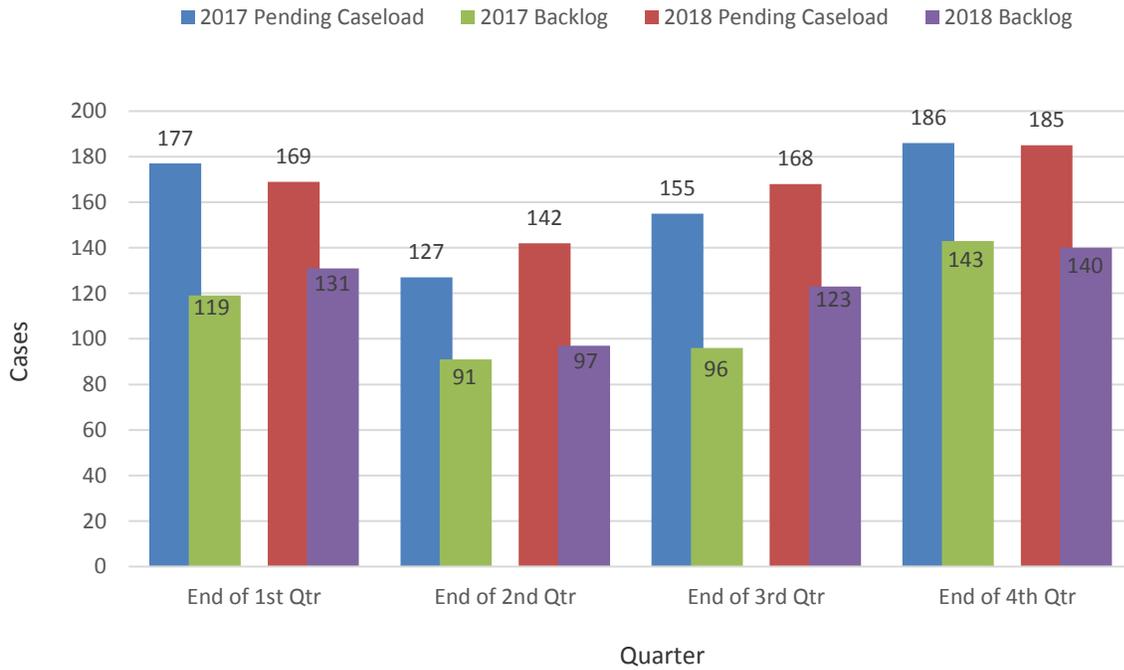
Directly Outsourced Biology Cases Received per Crime Type



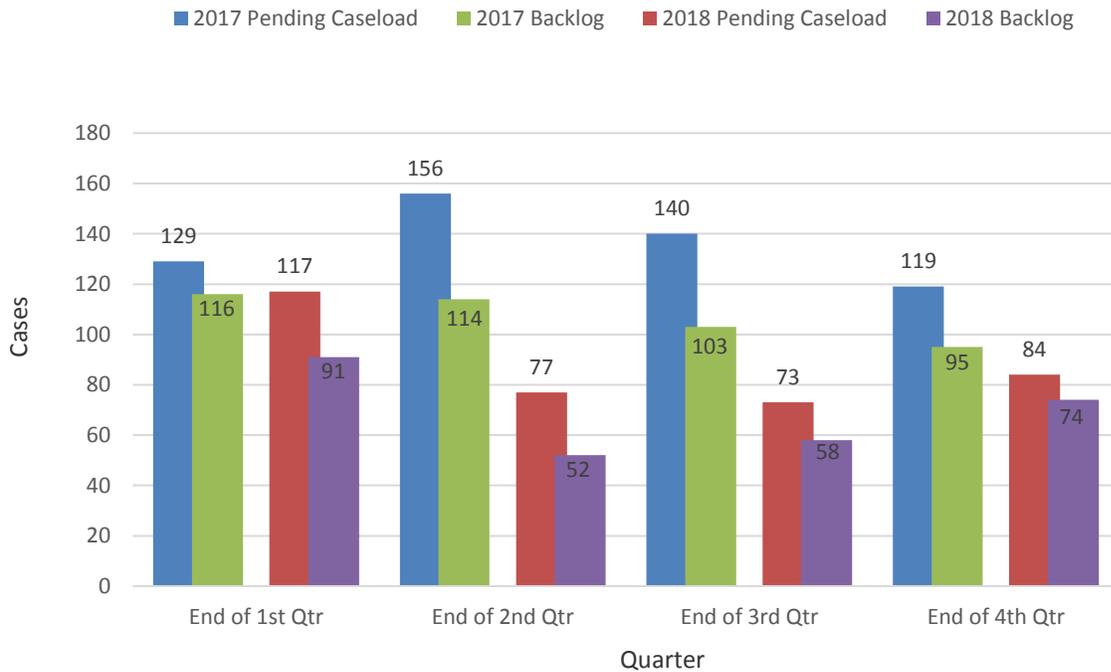
### Biology Cases Completed Per Month

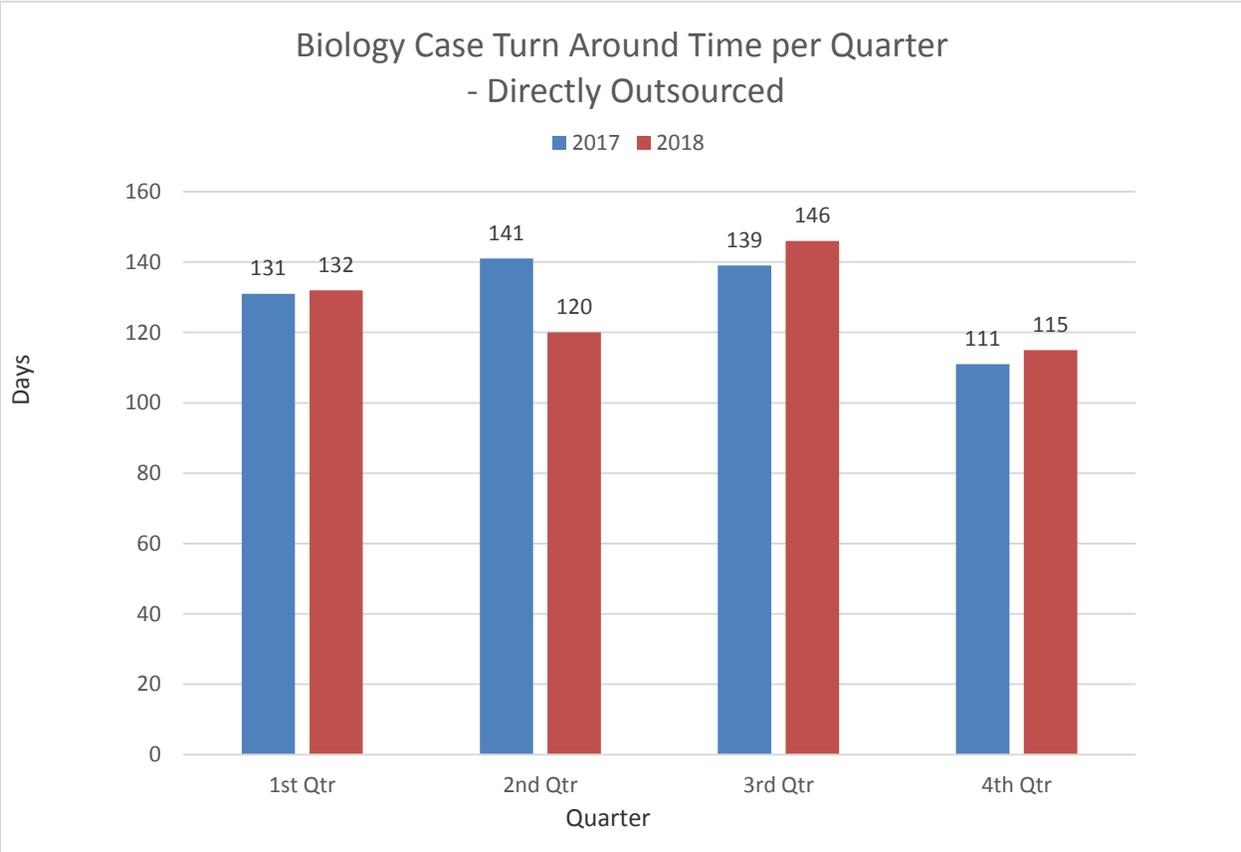
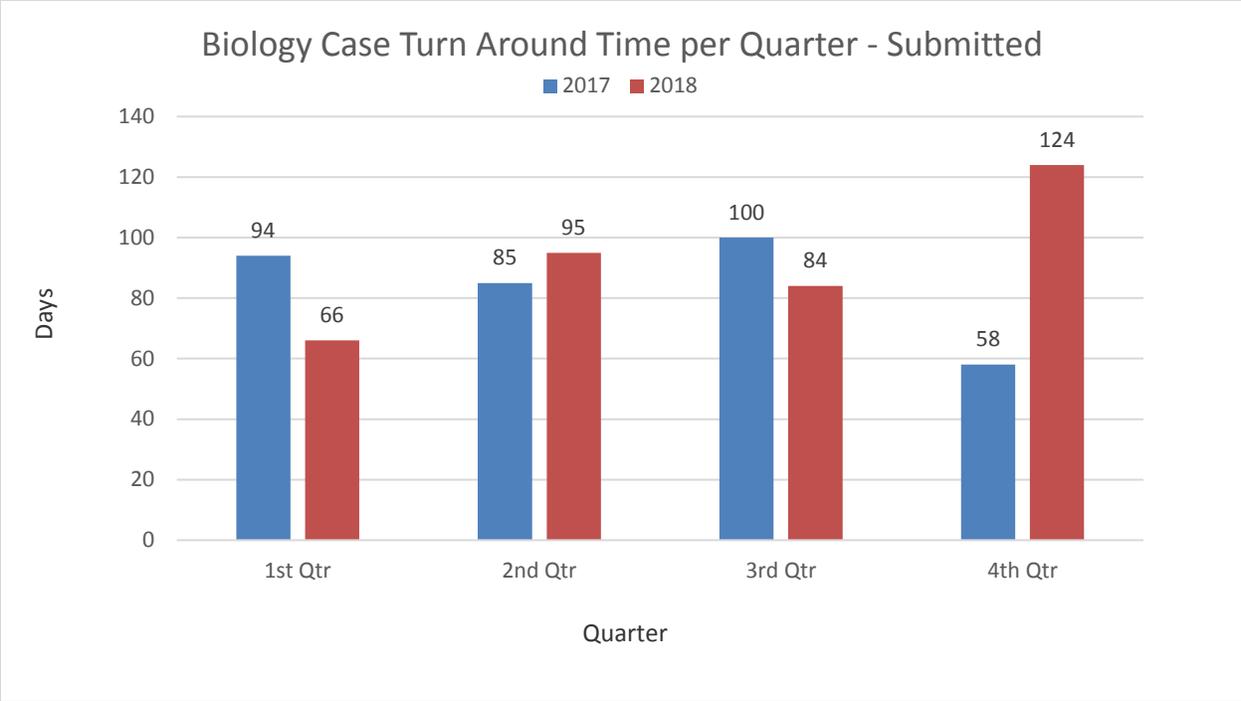


### Biology Pending Caseload and Backlog per Quarter - Submitted



### Biology Pending Caseload and Backlog per Quarter - Directly Outsourced

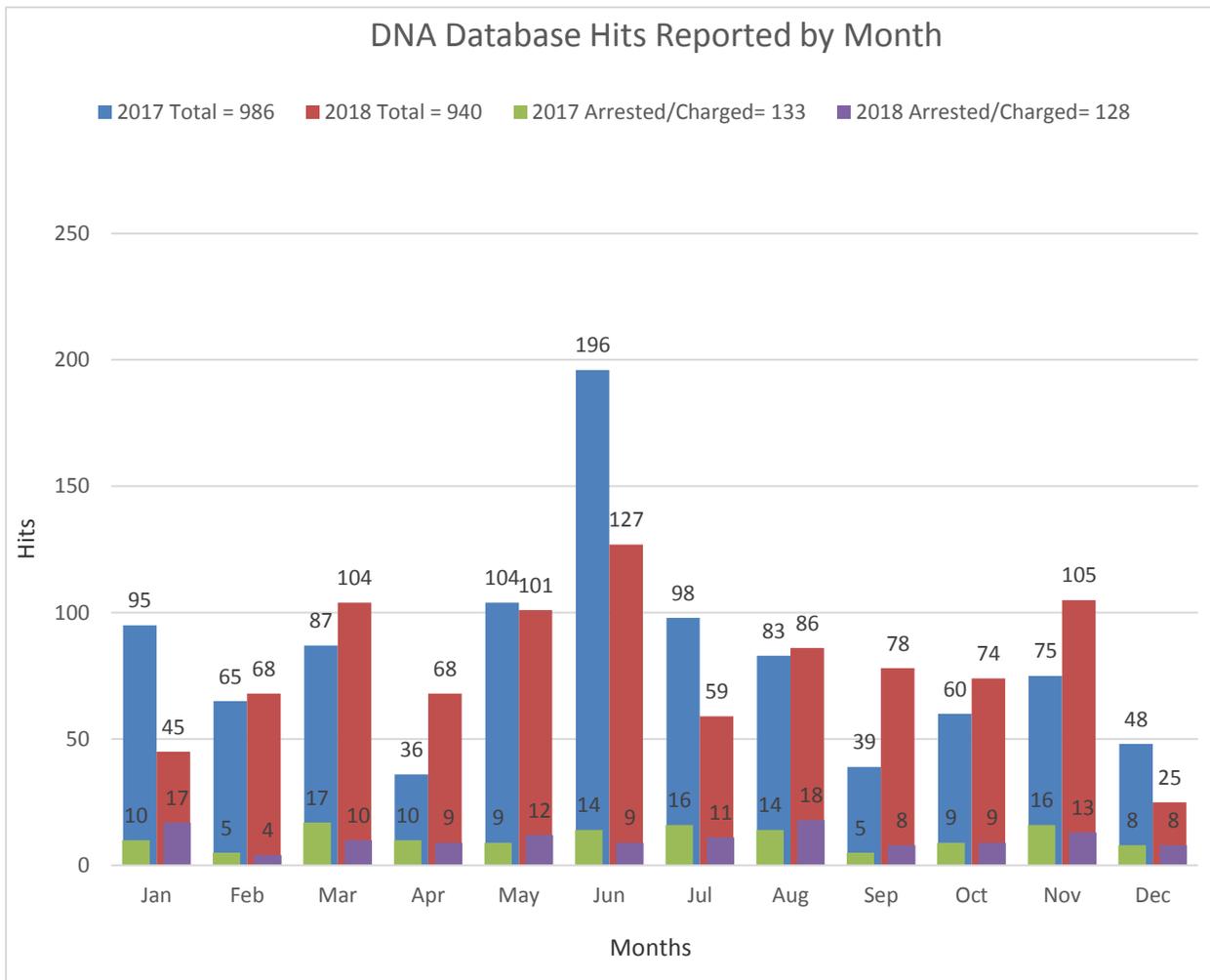




## BIOLOGY DATABASE UNIT

The DNA 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 DNA Database Unit is responsible for ensuring that all samples that were collected are received. The DNA 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 DNA Database Unit also oversees the entry of DNA profiles from casework evidence into the database.

In January 2018 the Maryland DNA Database released its 6000<sup>th</sup> hit. A 2012 robbery case was involved in this hit.



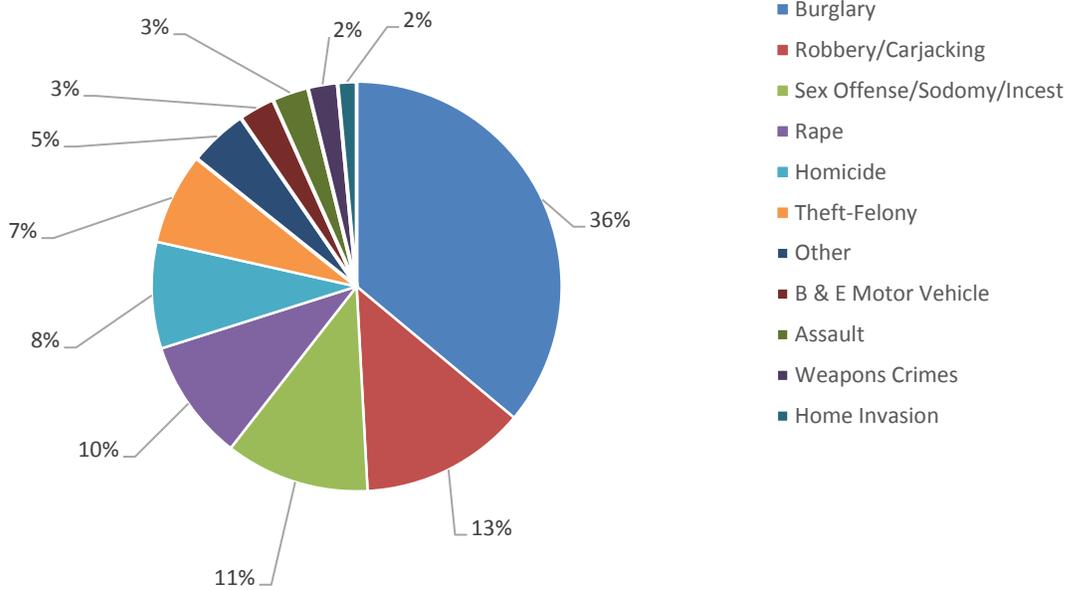
<b>Maryland Case DNA Database Hits</b>	
	<b>Hits</b>
Hits to Offenders/Arrestees (MD or National)	387
Hits to Cases (MD or National)	553
<b>Total</b>	<b>940</b>

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 NDIS). A Maryland case hitting to a Maryland offender/arrestee is counted as both a Maryland offender/arrestee hit and a Maryland case hit.

<b>Maryland Case DNA Database Hits by County</b>	
<b>County</b>	<b>Hits</b>
Baltimore City	250
Prince George's	159
Montgomery	151
Anne Arundel	111
Charles	50
Wicomico	43
Howard	32
Baltimore	22
Harford	16
St. Mary's	16
Cecil	15
Frederick	14
Talbot	12
Somerset	10
Washington	10
Carroll	7
Worcester	6
Dorchester	5
Allegany	4
Queen Anne's	3
Calvert	2
Caroline	2
<b>TOTAL</b>	<b>940</b>

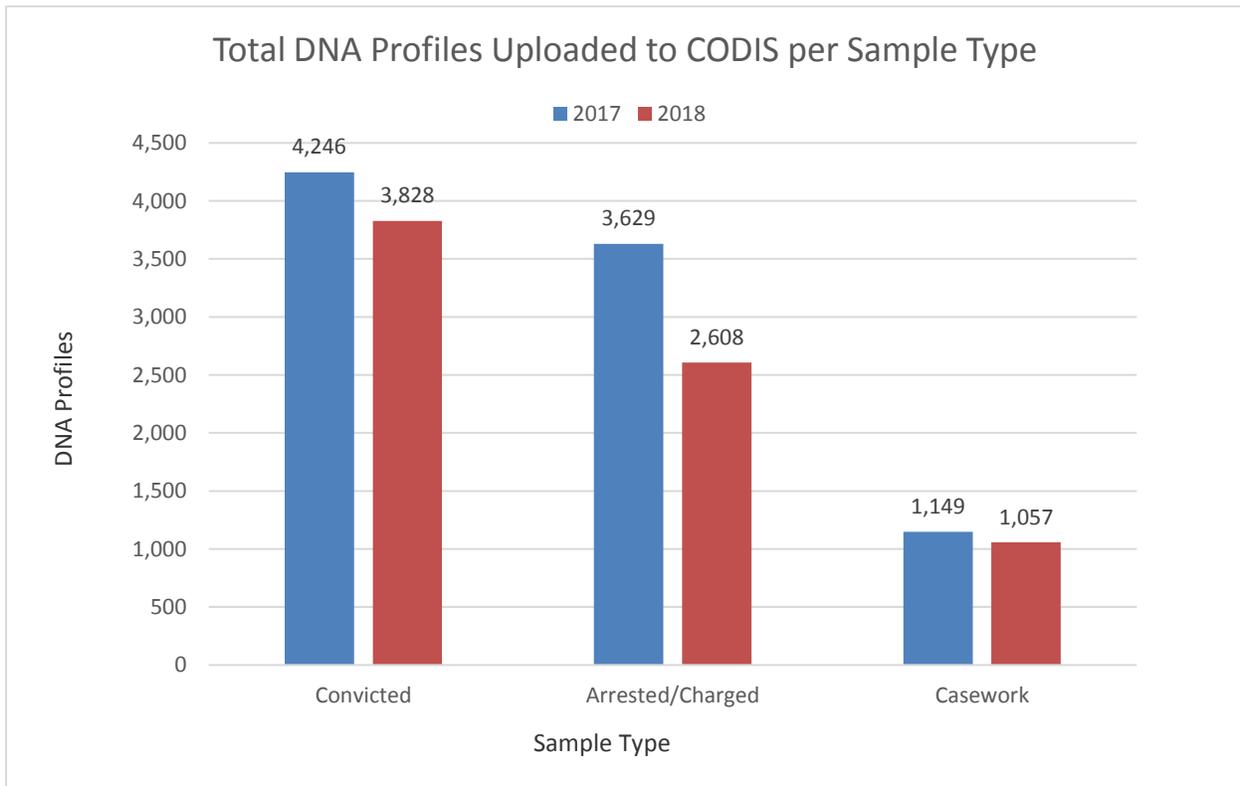
<b>Maryland DNA Database Case Hits by Crime Year</b>	
<b>Crime Year</b>	<b>Hits</b>
1985	1
1989	2
1990	1
1991	2
1992	1
1993	4
1994	1
1995	1
1996	3
1997	1
2000	2
2001	2
2002	7
2003	8
2004	16
2005	14
2006	13
2007	18
2008	10
2009	23
2010	16
2011	26
2012	41
2013	39
2014	27
2015	45
2016	94
2017	337
2018	162
<b>Unknown</b>	23
<b>Total</b>	<b>940</b>

### Maryland Case DNA Database Hits per Crime Type



### Maryland Offender/Arrestee DNA Database Hits per Crime Jurisdiction

Jurisdiction	Number of Hits
Maryland	269
District of Columbia (Metro PD)	35
Pennsylvania	10
Virginia	9
Delaware	8
FBI	7
West Virginia	4
New York	3
Florida	3
ATF	2
Alabama	1
Arkansas	1
California	1
Kentucky	1
Massachusetts	1
New Jersey	1
North Carolina	1
Ohio	1
South Carolina	1
Texas	1
US Army Criminal Investigation	1
<b>Total</b>	<b>361</b>



## **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 2018, the Technical Unit:

- validated the Hamilton Starlet to replace the current high-throughput instruments for Database,
- coordinated with the MDSP Homicide Unit to evaluate the M-Vac System for possible purchase,
- updated Section policies and procedures to bring the Biology Section into compliance with ANAB Standards, and
- assisted in the successful training of three current analysts to become proficient in Y-STR DNA analysis.

## NOTEWORTHY CASES

An unknown suspect broke into a female victim's home in 1993 and sexually assaulted her at knifepoint. He then fled in the victim's vehicle. The victim's vehicle was located a few days later. A cigarette butt, which was left behind by the suspect, was collected from the victim's vehicle and was tested. The resulting DNA profile was entered into CODIS but no hits occurred. After a fingerprint hit was made to a potential suspect, a known DNA sample was collected from that suspect after obtaining a search warrant. This known standard from the suspect matched the DNA profile from the cigarette butt. Further male DNA testing was pursued on pieces of bedsheets, which were torn by the suspect during the sexual assault. The suspect could not be excluded from a partial major male DNA profile, which was obtained from the torn bedsheet.

A resident reported an accident in his neighbor's driveway. Witnesses reported that two males exited and ran from the vehicle once the car stopped. A cab driver then picked up the two males. Upon arrival to the scene, EMS discovered the victim, who was in the driver's seat, had a bullet wound in her left cheek and was pronounced dead at the scene. The cab driver took the suspects to the home of the girlfriend of one of the suspects (Suspect #1). Suspect #1 was located at her home and police were informed that the other suspect (Suspect #2) had been there as well and that he was wearing a green "NY" baseball hat when he arrived. A green "NY" baseball hat was found outside of this home. Suspect #1 stated that he and Suspect #2 were in the car with the victim and that Suspect #2 shot the victim while she was driving. They then ran from the car to catch a cab that the victim had called for them. He stated that Suspect #2 had the gun and he was unsure why he shot the victim. A blood indicated stain from inside the cab had a DNA profile matching the victim. The jacket collected from Suspect #1 had a blood indicated stain on the left outside sleeve, which matched the victim. The green "NY" baseball hat had a blood indicated stain on the outside back of the hat, which had a major contributor DNA profile matching the victim. The inside brim and sweatband of the hat was swabbed for wearer DNA, and Suspect #2 was not excluded.

## **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, two Forensic Scientist III's and one vacant Forensic Scientist III position.

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 trace examiner from Baltimore County to technically review casework in which 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 and fracture match analysis and the Baltimore County Laboratory no longer offers Trace Evidence services, the 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 acquiring more instrumentation in 2019. As of early 2018, no public forensic laboratory in Maryland is currently conducting glass analysis.

### **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.

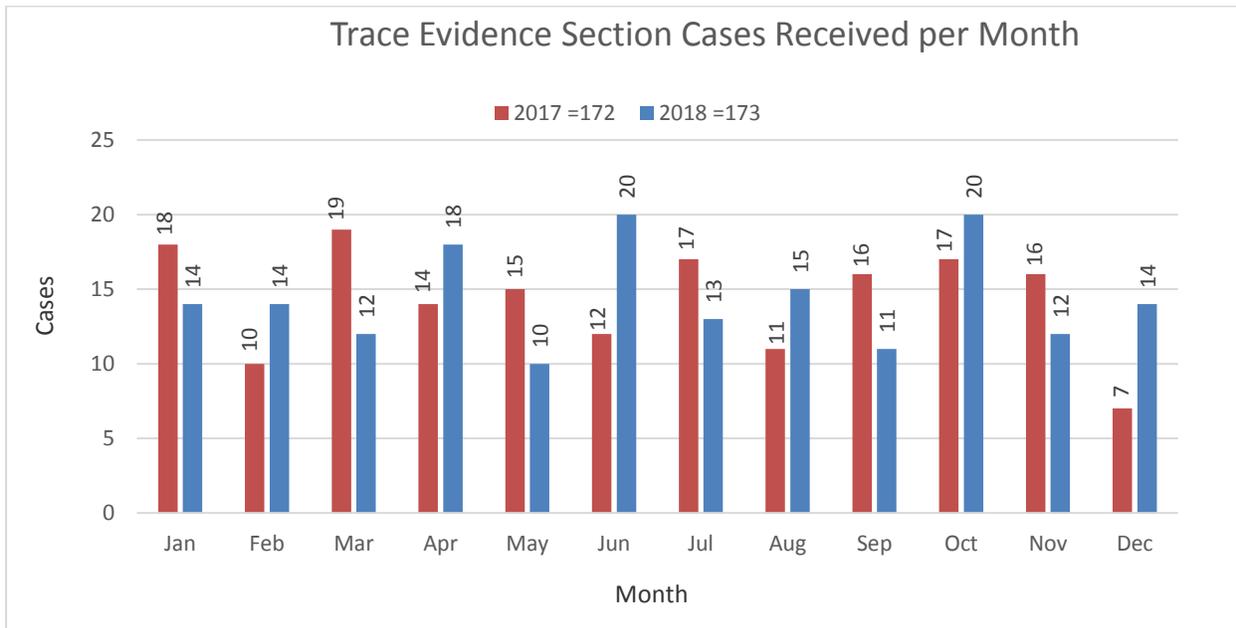
The Trace Chemistry Sub-Unit receives the bulk of the Trace Evidence Section case requests and is responsible for the analyses of any evidence that requires chemical or instrumental testing to determine physical and chemical properties. These include analyses in the areas of Fire Debris, Paint, Bank 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.

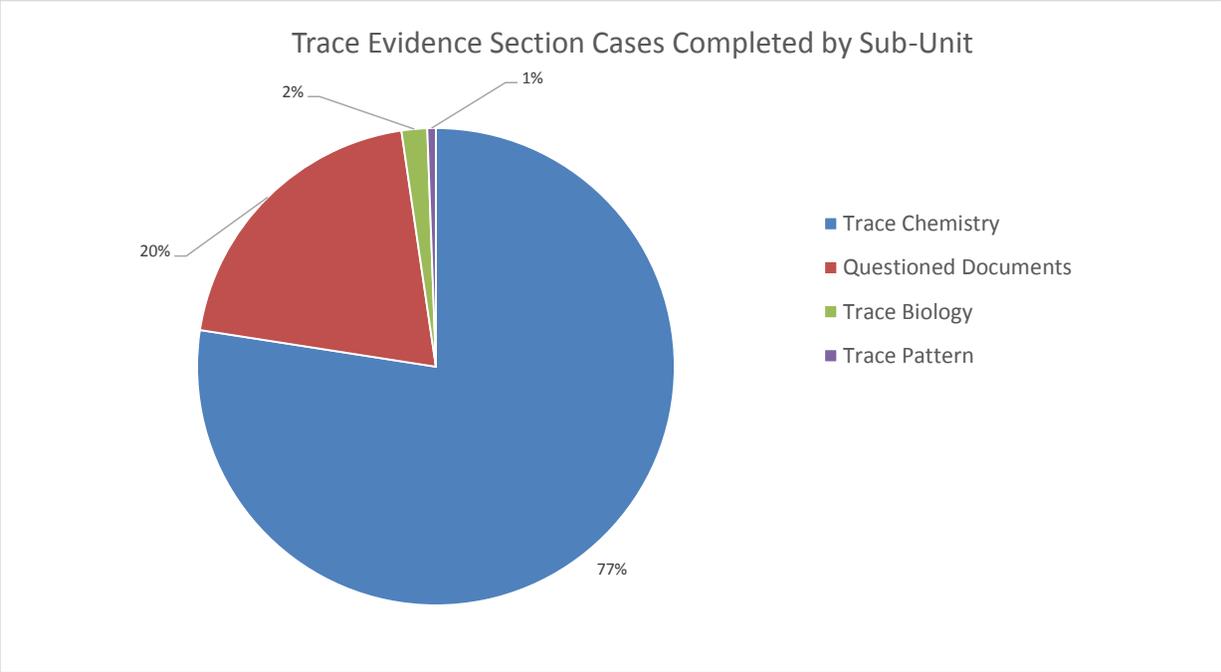
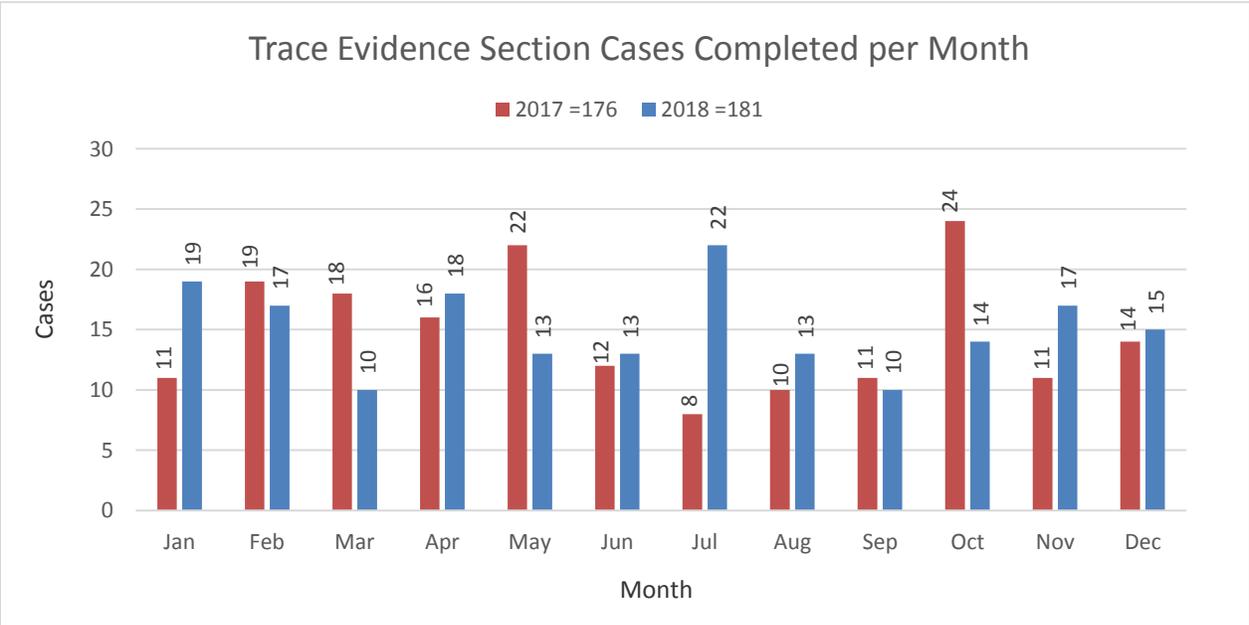
Since the FSD has only one Questioned Documents examiner, the Trace Evidence Section is in the process of training a Forensic Scientist III in Questioned Document analysis. This training is anticipated to be completed in the first half of 2019.



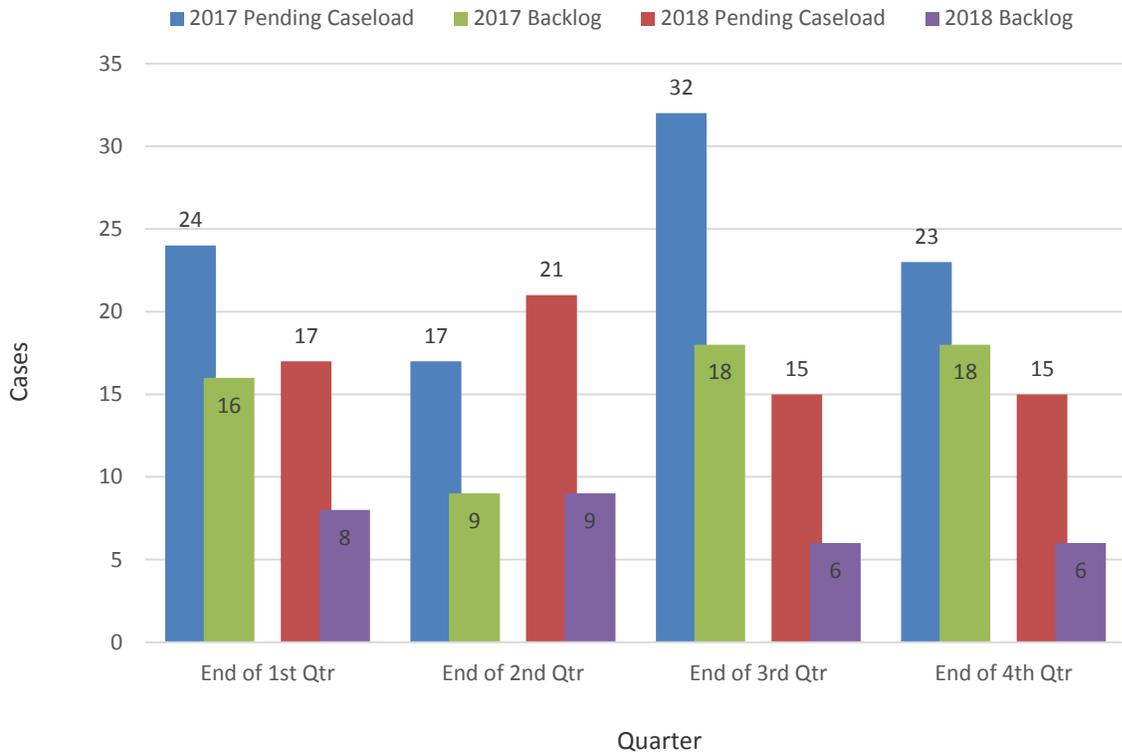
<b>Trace Evidence Section Cases Received per MSP Installation</b>		
<b>Installation</b>	<b>Counties Served</b>	<b>Submissions</b>
MSP-Salisbury	Wicomico	2
MSP-Frederick	Frederick	1
MSP-Bel Air	Harford	1
MSP-Easton	Caroline, Dorchester, Talbot	1
MSP-Hagerstown	Washington	1
MSP-Princess Anne	Somerset	1
MSP-Crash Team	Statewide	1
MSP-Homicide	Statewide	1
MSP-CID/CED	Somerset	1
	<b>TOTAL</b>	<b>10</b>

<b>OSFM Cases Received by the Trace Evidence Section per OSFM Region</b>		
<b>Region</b>	<b>Counties Served</b>	<b>Submissions</b>
OSFM - Lower Shore	Dorchester, Somerset, Wicomico, Worcester	11
OSFM - Southern	Calvert, Charles, St. Mary's	11
OSFM - North East	Harford, Cecil	9
OSFM – Metro	Carroll, Howard, Frederick	7
OSFM - Upper Shore	Caroline, Kent, Queen Anne's, Talbot	7
OSFM - Western	Alleghany, Garrett, Washington	7
	<b>TOTAL</b>	<b>52</b>

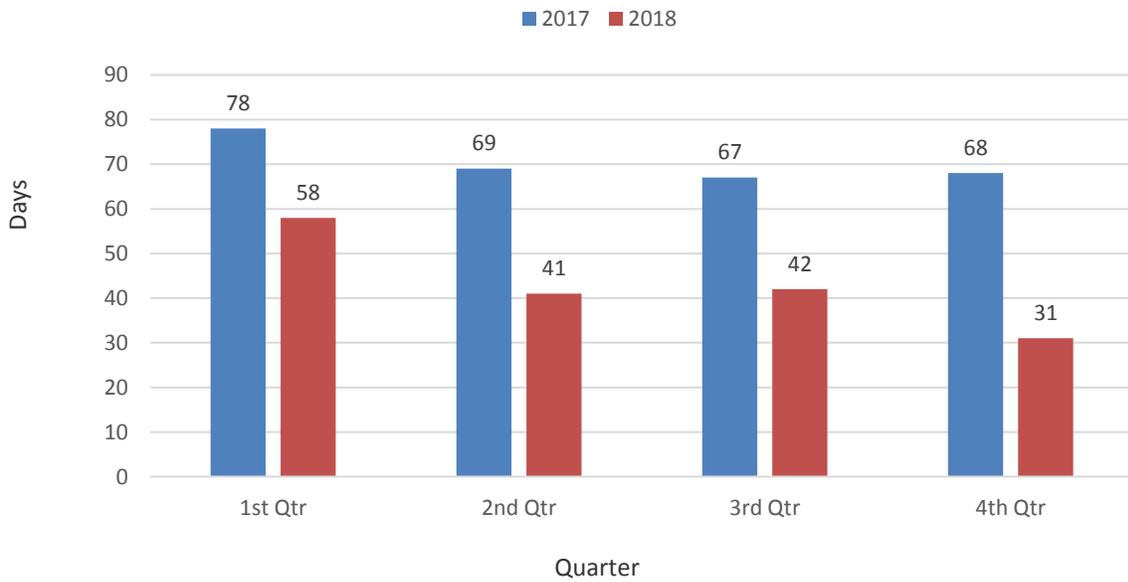
<b>Allied Agency Cases Received by TES per County</b>	
<b>County</b>	<b>Submissions</b>
Baltimore	28
Anne Arundel	27
Montgomery	15
Howard	10
Wicomico	5
Harford	4
Frederick	3
Prince Georges	3
Queen Anne's	3
Worcester	3
Cecil	2
Calvert	1
Carroll	1
Charles	1
Dorchester	1
Kent	1
Out of State	1
Somerset	1
Talbot	1
<b>TOTAL</b>	<b>111</b>



### Trace Evidence Section Pending Caseload and Backlog per Quarter



### Trace Evidence Section Case Turn Around Time per Quarter



## **NOTEWORTHY CASES**

In July 2018, the Questioned Document (QD) examiner was contacted by Anne Arundel County Police Department in reference to the Capital Gazette shooting case. Detectives had recovered typed letters that were sent to judges in Maryland and Virginia. A printer and several hand printed notes were seized from the suspect's apartment. A comparison was completed to determine if the typed letters could have been produced by the suspect printer. Analysis for this case is ongoing.

Also in July 2018, the Office of the State Fire Marshal submitted several items of clothing from an Arson suspect, including his shoes. A sample of a brown liquid was also submitted for comparison. The brown liquid and the shoes tested positive for a gasoline substitute known as Trufuel. In order to make an identification, a comparison product must be available. After researching the product online and securing a retail store where it could be purchased, the product was obtained, analyzed and a positive comparison was made to five of the seven submitted items. This case resulted in a guilty plea.

## **EMPLOYEE RECOGNITION**

### **Special Appointments**

Catherine Savage, Forensic Scientist Advanced in CDS-Pikesville, has been elected as the Chair of the Criminalistics Board for the Mid-Atlantic Association of Forensic Scientists (MAAFS) for 2018 and 2019.

Diane Lawder, Forensic Scientist Advanced in Trace Evidence, was elected as President of MAAFS and began her term in May 2018.

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 Committee.

## Quarterly Teamwork Awards

### 2018 Q1 – FATMU

In the months of January and February, FATMU test fired 160 guns to complete 126 cases. This work resulted in 98 NIBIN entries and generated five leads. These leads were provided to the appropriate law enforcement agencies as well as the Maryland Gun Center for follow up.

Not all leads generated by NIBIN are simple pairwise matches. Some leads create a web of interconnected cases. Test firing these weapons and entering the cartridge cases into NIBIN in a timely manner has the potential to provide valuable information to investigators. FATMU should be commended for the efforts they've made to altering their workflow to ensure that they are meeting our customer's needs in this manner.



## 2018 Q2 - Crime Scene Trainers

Over the past year and a half, FSD has hired 6 new Crime Scene Technicians in order to refill positions that had become vacant. In order to carry out this training as efficiently and effectively as possible, a two pronged approach was used. In an effort to promote consistent use of best practices, the Crime Scene Technician Supervisors and Manager provided all new hires with both classroom and practical instruction. Meanwhile, in order to develop the ability to adapt those best practices to the unique circumstances of a specific crime scene, each new Crime Scene Technician was teamed up with an experienced Crime Scene Technician.

CSS Manager Mitch Dinterman, CST Supervisor Kris Amspacker, CST Supervisor Shawn Miller, CST Supervisor Danielle Goodnow, CST II Jenn Jeudy, CST II Stephanie Anschuetz, CST II Maggie Iman, CST II Nikki Zack, and CST II Linda Idso not only trained the new hires, but they became mentors invested in creating successful and productive future Crime Scene Technicians. It is this teamwork among the trainers and between the trainers and their trainees within the Crime Scene Section that ultimately allows our newest Crime Scene Technicians to succeed on their own.



## 2018 Q3 - Bulk Opioid Seizure Response

Units Involved: Central Receiving (Cindy Hoffmann and Monyai Stukes), Chemistry (Amber Burns), Top Management (Theresa DeAngelo), Photography (Amy Hager)

On July 23, 2018 Troopers seized what was thought to be approximately 24 pounds of suspected heroin/fentanyl - it was thought that several of the packages were pure fentanyl. Chemistry Section Manager Amber Burns, Quality Assurance/Safety Manager Theresa DeAngelo, and MSP Risk Manager Margaret Michel all worked in conjunction with CRU Supervisor Cindy Hoffman to ensure the safe transportation, storage, and analysis of the suspected CDS. On August 23, 2018 Burns donned a full tyvek suit, nitrile gloves, a protective mask, and safety glasses in order to perform sampling on the case. Meanwhile, DeAngelo and Michel observed in the lab from distance with Naloxone at their disposal. Photography Unit Supervisor Amy Hager arranged to have a remote camera set up in the area to record the sampling in order to memorialize this unique event in case the huge amount of seized material was confirmed to be fentanyl. Burns sampled the case without incident and it was ultimately determined that there was no fentanyl in the packages at all, only heroin and cutting agents.



## 2018 Q4 - CDS Training Initiative

A total of five new CDS Forensic Scientists were hired in 2018. Training these junior scientists has been a huge endeavor. Between rewriting the training manual, creating the mock training cases, guiding the trainees through the training modules, and making sure someone was always available to oversee the supervised casework, the senior level chemists in Pikesville and Hagerstown (with guidance from QA/Safety Manager Theresa DeAngelo) came together under very stressful circumstances and showed extraordinary teamwork to move their units forward. The efforts of Amber Burns, CR Miller, Sashi Kambhampati, Cathy Savage, and Brooke Welsh in training the next generation of Drug Chemists will greatly benefit FSD for years to come!



## Governor's Citation

Director Mike Morello, Governor's Office of Performance Improvement, visited FSD in February 2018 to present Chemistry Section Manager Amber Burns with a Governor's Citation for the work Ms. Burns has done to support the MADTF Parcel Interdiction Team and her contribution in the fight to prevent illegal drug distribution within Maryland.



## **Commander's Award for Outstanding Performance**

### **Taylor Lentz, Forensic Scientist II Latent Print/Impressions Unit**

While only joining the FSD in February 2017, Ms. Lentz has already proven herself to be a stellar employee. She has worked through her training efficiently and effectively meeting her milestones and developing the necessary skills to become a qualified latent print examiner. In addition to the high quality of her work, she has demonstrated a professional, mature and kind demeanor that reflects well on herself and the FSD.





**END OF DOCUMENT**