



Central (Richmond)



Northern (Manassas)



Eastern (Norfolk)



Western (Roanoke)

DEPARTMENT OF FORENSIC SCIENCE UPDATE

Linda C. Jackson, Director

Presented to the Forensic Science Board

October 14, 2021





Central Laboratory Capital Project

- Construction package presented to General Assembly capital funding committee
- Construction (Working) drawings are being prepared for submission for final approval by DEB
- Groundbreaking/Site preparation currently anticipated in late first quarter of 2022
- Project completion anticipated 2024



Virginia Forensic Science Week

September 19 - 25, 2021



- Governor Northam proclaimed September 19 – 24 as Virginia Forensic Science Week
- Presented 70 service awards
- Planned local recognition activities



15,000th DNA Data Bank Hit

- Data Bank was established in 1989
- First out of state hit in 1998
- First arrestee hit in 2003
- ~500,000 samples

Virginia Department of Forensic Science Achieves 15,000th DNA Data Bank Hit

First-of-its-kind data bank's innovations have revolutionized forensic science

RICHMOND—Governor Ralph Northam today announced the Department of Forensic Science reached its 15,000th DNA Data Bank “hit.” This is a significant milestone in the history of the Data Bank, which was created in Virginia in 1989.



Accreditation

- Preparing for procurement of a new accreditation services contract
- Current accreditation expires September 30, 2022





Audits and Reviews

- Beginning
 - Office of the State Inspector General Audit to identify areas where potential improvements to effectiveness, efficiency and economy of operations
- Completed
 - IT Security Audit completed by VITA
 - National Institute of Justice Desk Audit of 2018 Toxicology Research Grant



New Policy Initiatives

ONE Virginia Plan

- Including Diversity, Equity & Inclusion language in Employee Work Profiles
- DHRM Road to Cultural Competence training in October
- Researching virtual laboratory tour videos





New Policy Initiatives

EO 77 – Reduction of Solid Waste and Single Use Plastics

- Submitted spreadsheet to DEQ on September 20, 2021
- Disposable plastic laboratory consumables are utilized to significantly reduce the potential for cross contamination between samples
- Single use plastic consumables are part of validated methods
- Medical exemption
- Current laboratory recycling programs are being evaluated





Laboratory Information Management System (LIMS) Projects

- DNA Data Bank Sample Tracking System
 - Henrico Sheriff's Office - Beta Tester
- No Update:
 - Prelog for evidence submission information
 - Expungement Module
 - Power BI for data presentation

Forensic Training for Attorneys and Judges



- Controlled Substances Analysis
- Two sessions
 - Friday, October 1, 2021
 - Friday, November 12, 2021, 8:30 a.m. – 12:00 p.m. (deadline to register is Friday, 11/5/21)
- Half day, virtual, pre-recorded presentations with live question and answer periods
- No registration fee and no CLE credits

Controlled Substances Training Agenda



- Introduction and Welcome
- Standards and Best Practices
- Controlled Substance Scheduling
- Presumptive and Confirmatory Testing
- Cannabis/Marijuana Testing
- Quantitative Testing
- Sampling Procedures
- Uncertainty of Measurement
- Clandestine Laboratory Analysis



Join us virtually for
**Controlled
Substances**
Training for Virginia Criminal
Attorneys and Judges

[https://www.dfs.virginia.gov/
training/attorneys_judges/](https://www.dfs.virginia.gov/training/attorneys_judges/)

A photograph of a laboratory instrument, likely a pipette or a scale, with several small vials or containers on its surface. The background is slightly blurred, showing other laboratory equipment.



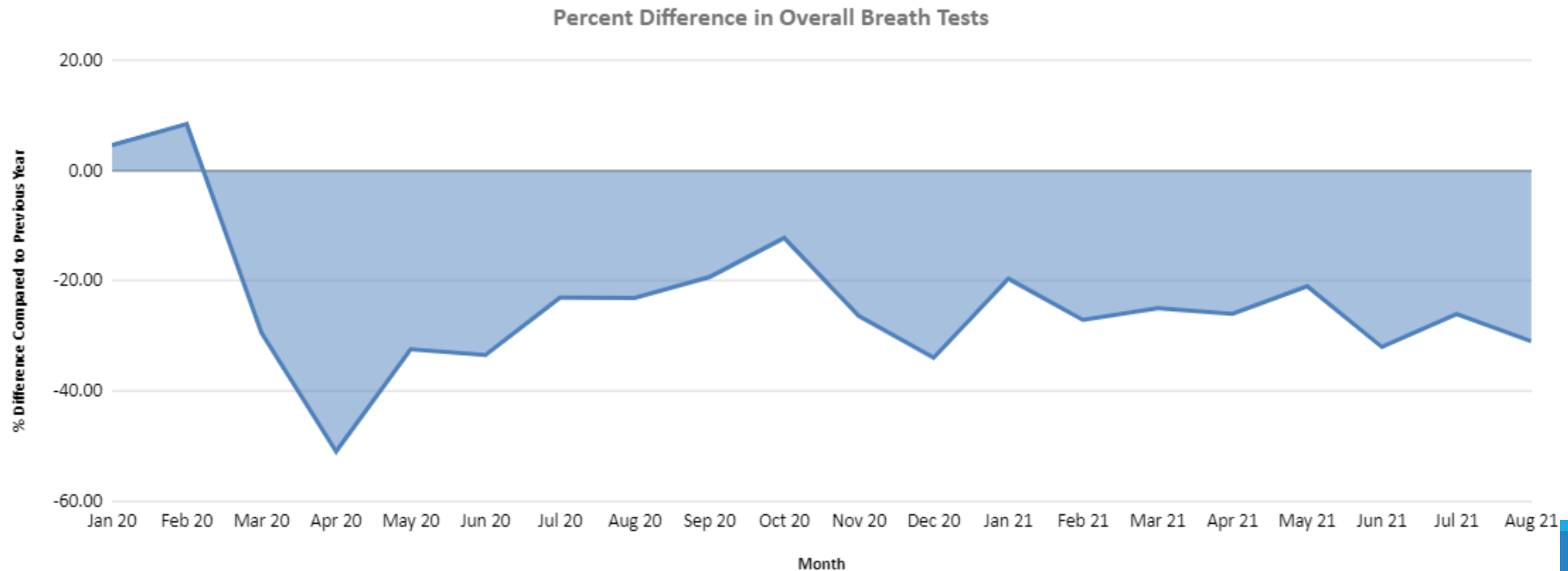
Forensic Training

- 104th FSA began September 13th, and graduates on November 11th
- 105th FSA begins January 31, 2022
- Annual Retraining was held virtually on September 1-3, 2021



Breath Alcohol Testing

- The number of breath tests performed in the field continues to be lower than in 2019





Workload Statistics

DFS Workload Statistics	Case Submissions			Difference FY19/FY21
	FY19	FY20	FY21	
Section				
Controlled Substances	34,787	33,757	27,111	-22%
Digital & Multimedia Evidence	233	119	178	-24%
Firearms & Toolmarks	6,627	7,202	8,169	+23%
Forensic Biology	6,027	5,988	6,430	+7%
Latent Prints & Impressions	2,558	2,581	2,196	-14%
Toxicology	9,669	10,047	11,384	+18%
Trace Evidence	714	679	714	0%
Total	60,615	60,373	56,182	-7%



September Workload Statistics

Discipline/Section	Ending Backlog As of 9/30/2021	Average TAT (in days) September 2021
Controlled Substances	1,157	22
Digital & Multimedia Evidence	81	133
Firearms & Toolmarks	2,578	125
Forensic Biology (DNA)	1,798	161
Latent Prints & Impressions	346	61
Toxicology	1,377	58
Trace Evidence	151	84

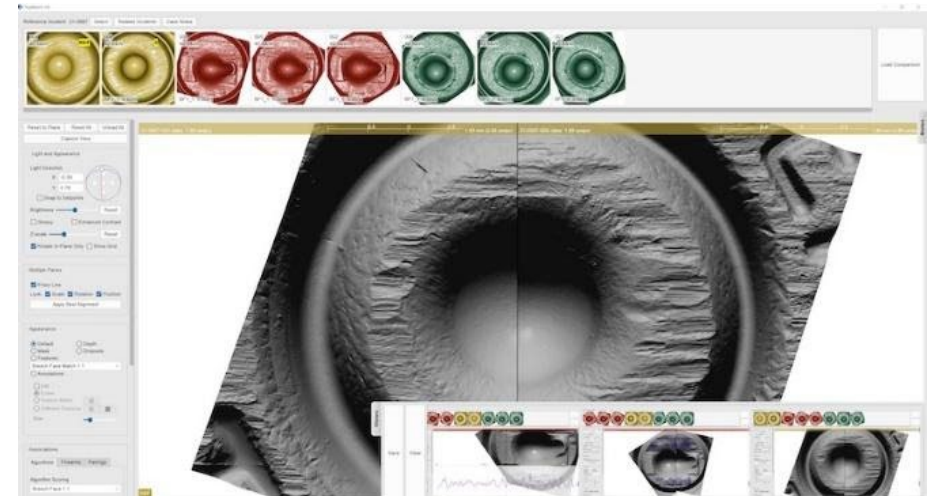


Physical Evidence – Firearms & Toolmarks

- 3 Forensic Scientist (FS) positions in training, 2 FS Trainees starting in October and 2 FS Trainees in the interview process
- Received funding for equipment via American Rescue Plan Act (ARPA) – 3 FS transferred from Controlled Substances
- Long training period
 - FS NIBIN - 6 months
 - FS Firearms - 18 months
 - FS Firearms & Toolmarks - 24 months

Firearms and Toolmarks

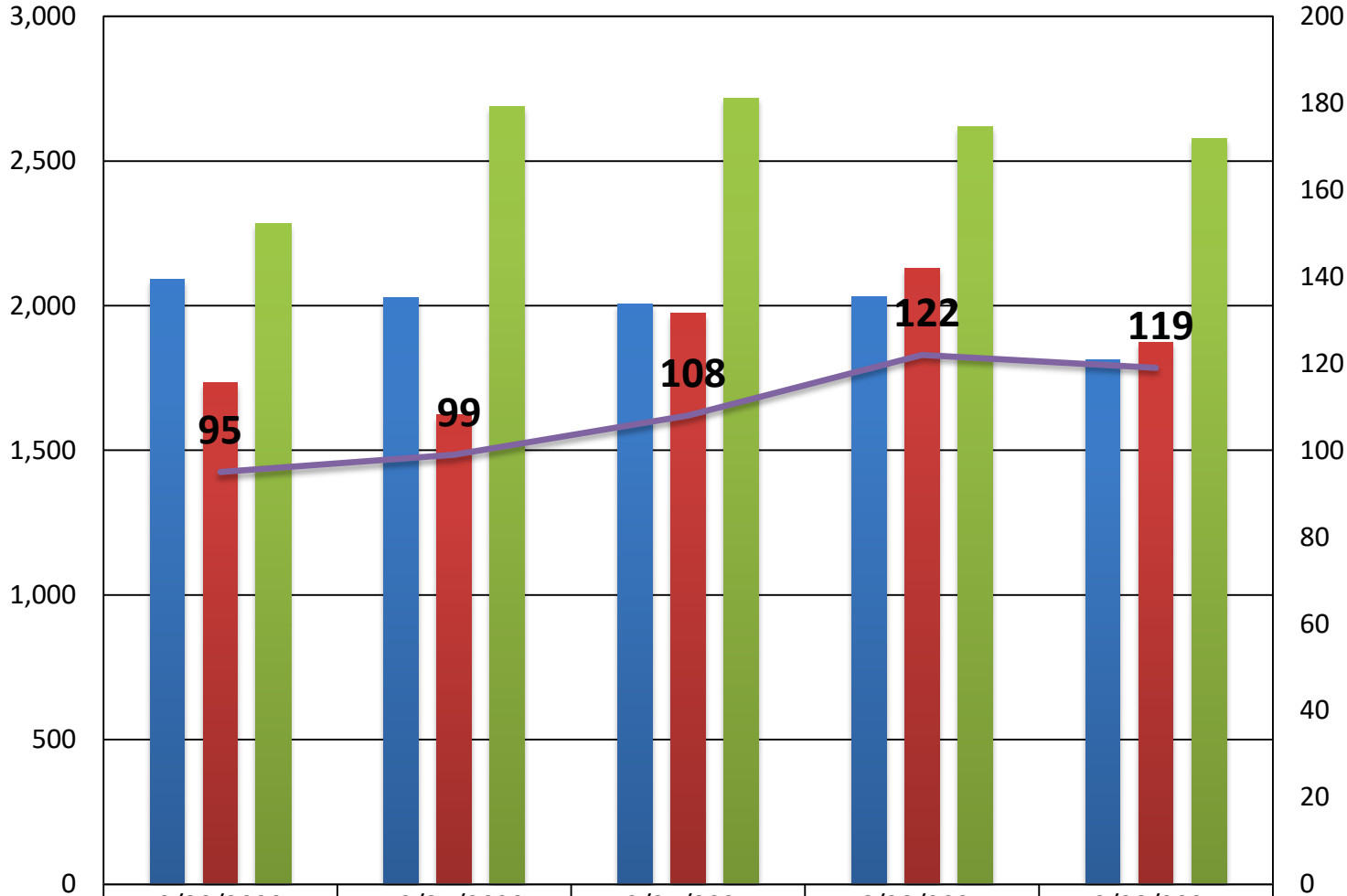
- Implemented Virtual Comparison Microscopy (VCM) for Screening/Grouping in the Eastern Laboratory
 - Increases efficiency in cases with numerous cartridge cases
 - First step towards implementing 3D imaging in casework



Firearms & Toolmarks

Number of Cases

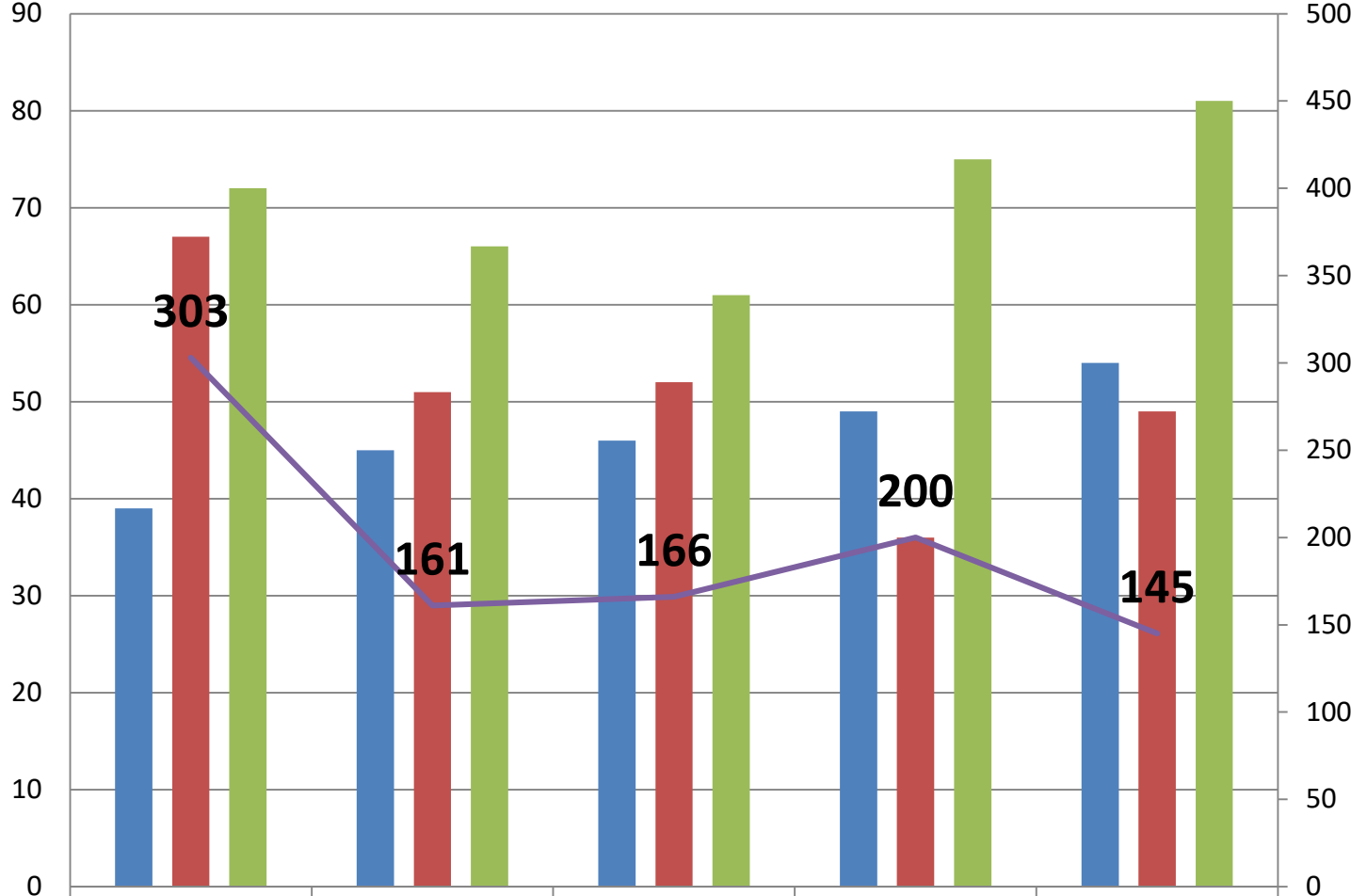
Number of Days



	9/30/2020	12/31/2020	3/31/2021	6/30/2021	9/30/2021
Cases Received*	2,092	2,029	2,005	2,030	1,812
Cases Completed	1,734	1,624	1,975	2,130	1,875
Caseload	2,283	2,688	2,718	2,618	2,578
Average Days in System	95	99	108	122	119

Digital and Multimedia Evidence

Number of Cases Number of Days

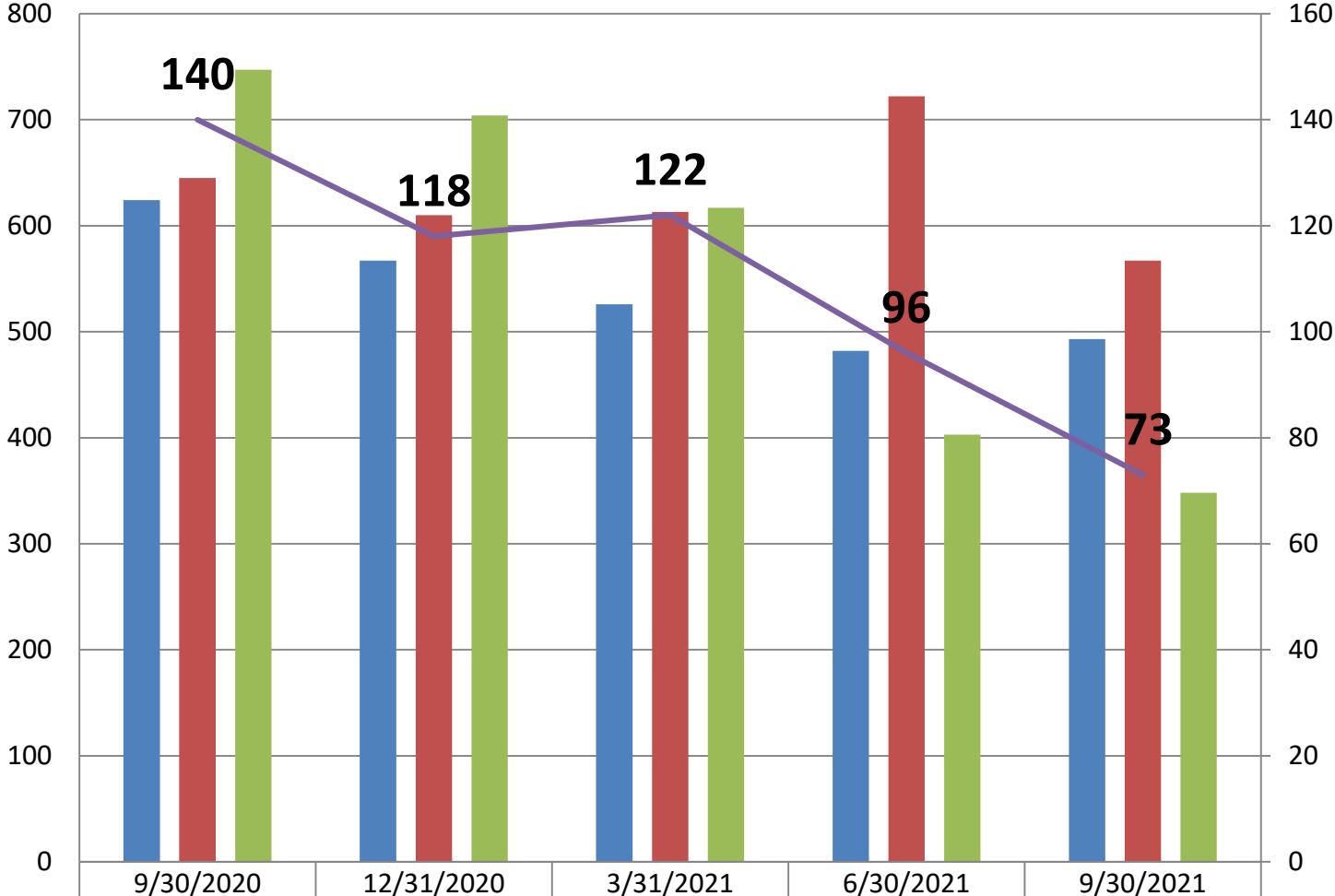


Cases Received*	39	45	46	49	54
Cases Completed	67	51	52	36	49
Caseload	72	66	61	75	81
Average Days in System	303	161	166	200	145

Latent Prints & Impressions

Number of Cases

Number of Days

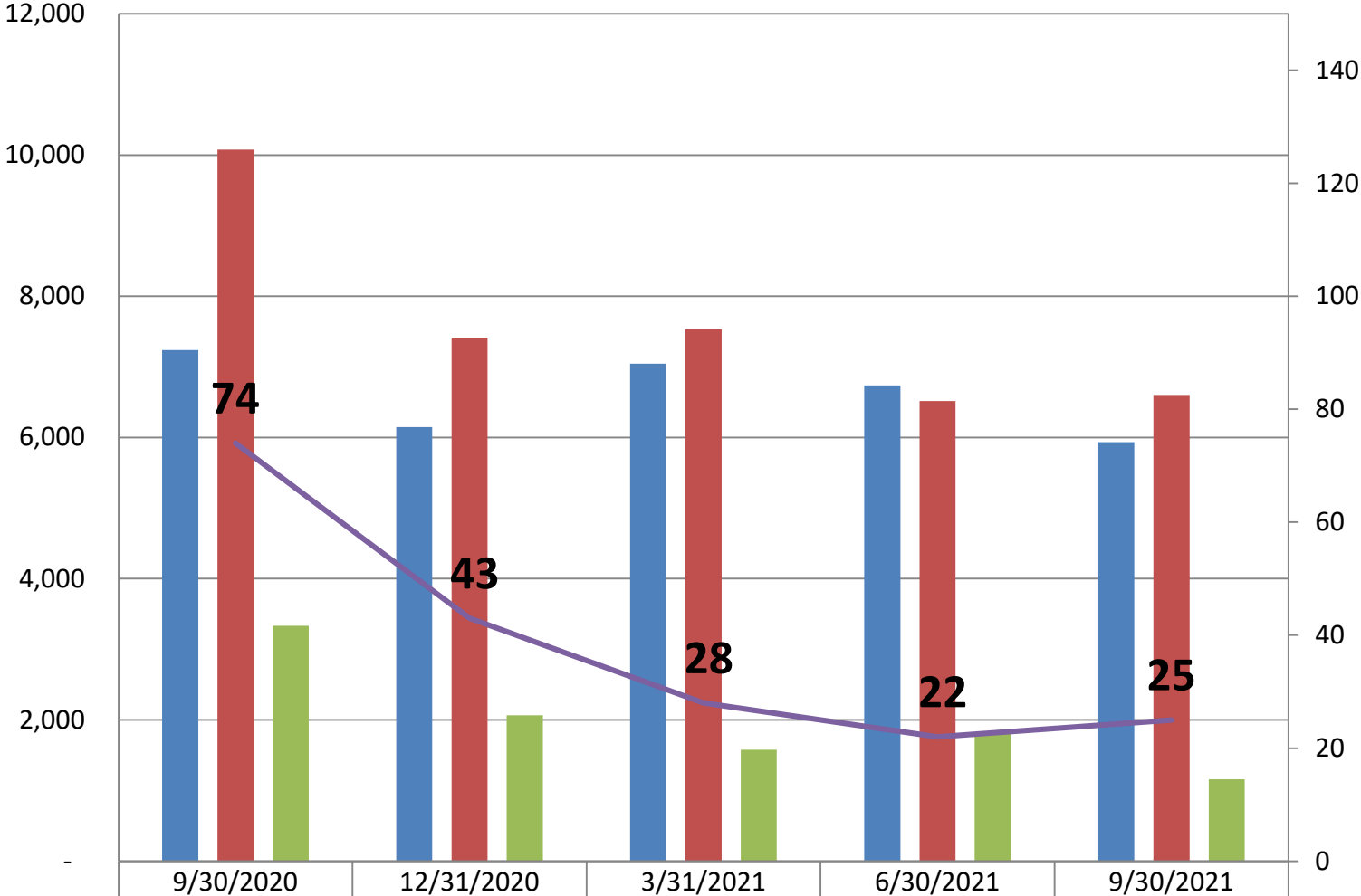


Cases Received*	624	567	526	482	493
Cases Completed	645	610	613	722	567
Caseload	747	704	617	403	348
Average Days in System	140	118	122	96	73

Controlled Substances

Number of Cases

Number of Days



■ Cases Received*	7,239	6,148	7,046	6,739	5,933
■ Cases Completed	10,076	7,416	7,533	6,514	6,603
■ Caseload	3,333	2,066	1,578	1,818	1,158
— Average Days in System	74	43	28	22	25



Cannabis Update

- Semi-Quantitative method updated December 11, 2020
 - Plant material and cannabis extracts
 - Administrative threshold is 1% Δ 9-THC
 - Not applicable to edibles or residues
- Quantitation of Δ 9-THC via GC-MS for plant material
 - Implemented August 2021
- Policy Notice distributed August 19, 2021:
 - <https://www.dfs.virginia.gov/wp-content/uploads/2021/08/POLICY-NOTICE.-THC-Quant-MJ-Submissions.pdf>



Cannabis Submission Guidelines

	Evidence Accepted	Evidence Accepted with Limitations	Evidence Not Accepted
Possession of marijuana and marijuana products (§ 4.1-1100, § 4.1-1105.1)	Quantities over 1 pound OR Any felony offense	Contested civil offenses (greater than 1 ounce but less than 1 pound) submitted by law enforcement	Quantities under 1 ounce OR Uncontested civil offenses
Possession with Intent/Distribution (§ 18.2-248.1)	Quantities over 1 ounce	Quantities under 1 ounce require a request from a Commonwealth's Attorney (CA)	Quantities under 1 ounce without CA request

<https://www.dfs.virginia.gov/laboratory-forensic-services/controlled-substances/marijuana-submission-guidelines/>



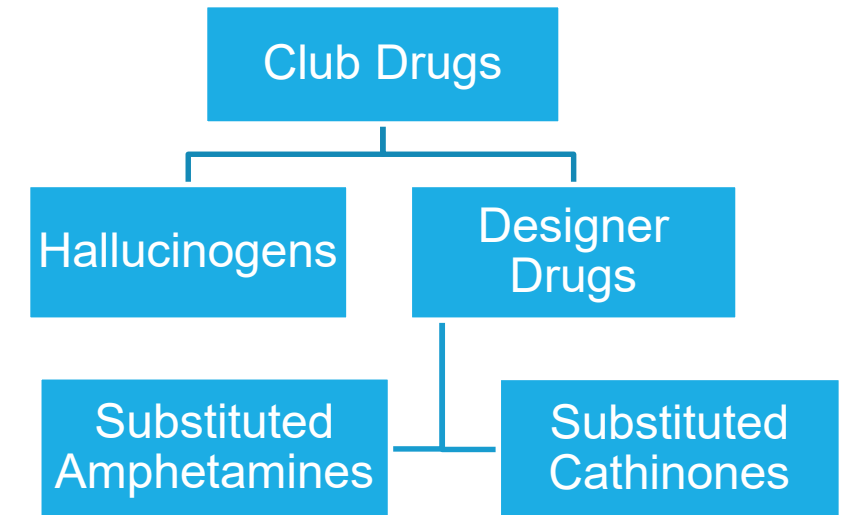
Report on Seized Drugs - CY2020

Drug Cases Submitted to the
Virginia Department of Forensic Science
Calendar Year 2020

Produced by the Virginia Department of Criminal Justice Services
in partnership with the Virginia Department of Forensic Science



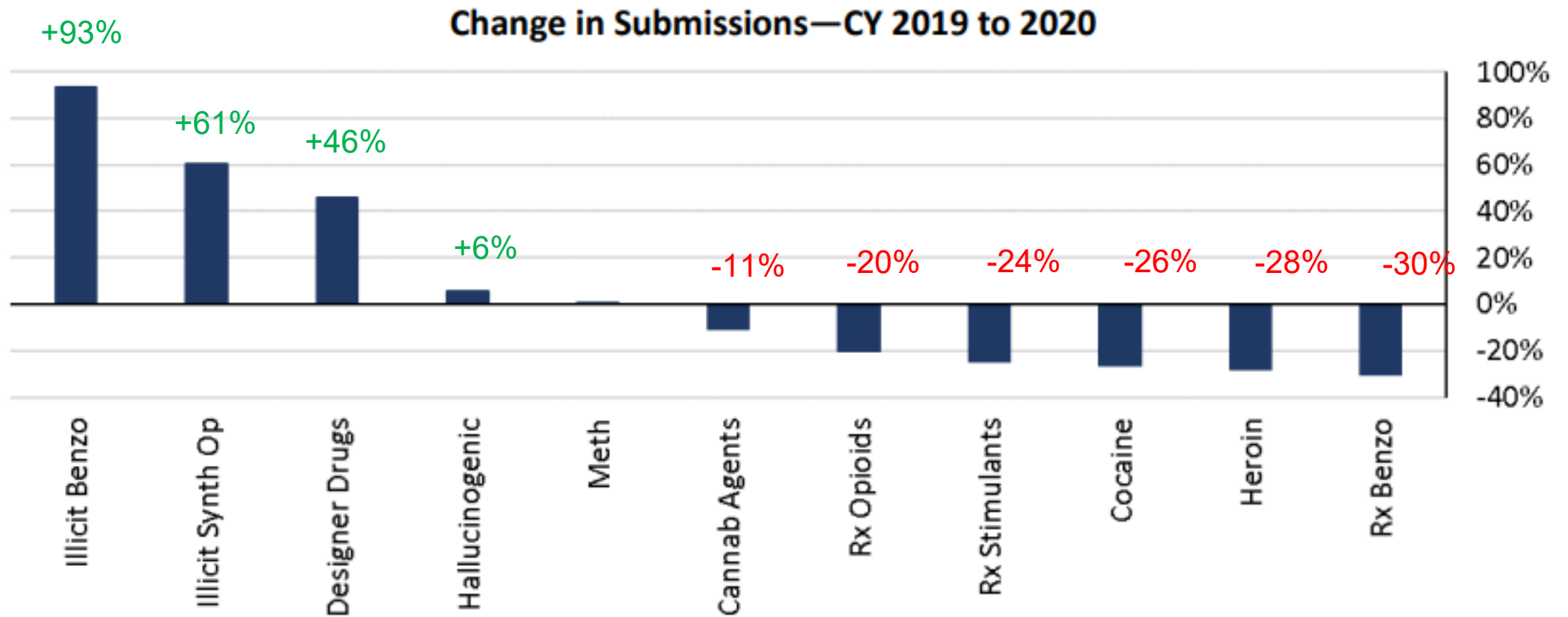
- Updates
 - Format
 - Drug Classifications
 - Specific Drug Trends



https://www.dfs.virginia.gov/wp-content/uploads/2021/08/DFS2020DrugSubmissionDataReport_web.pdf



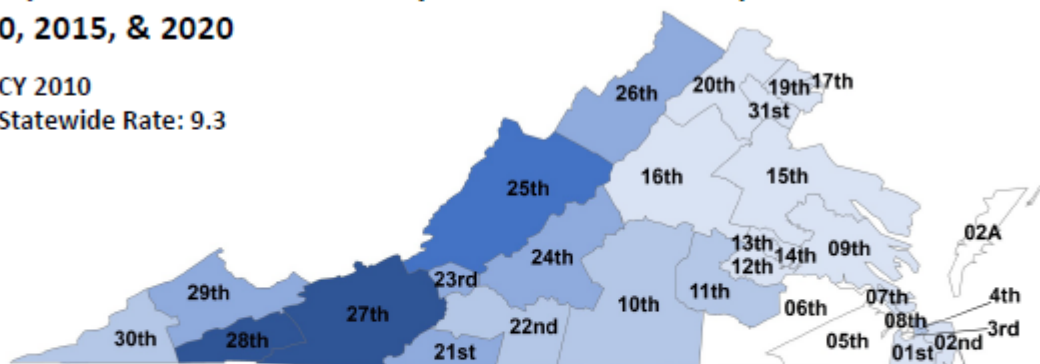
Changes to Drug Trends



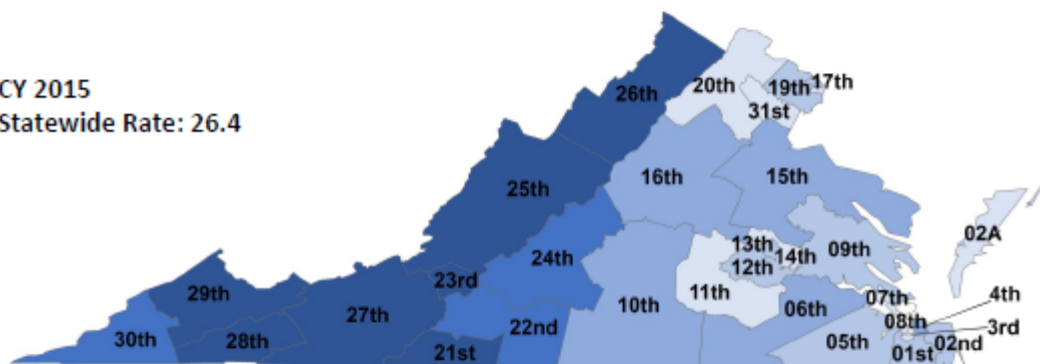


Methamphetamine Submissions by Court District, Rate per 100,000 CY 2010, 2015, & 2020

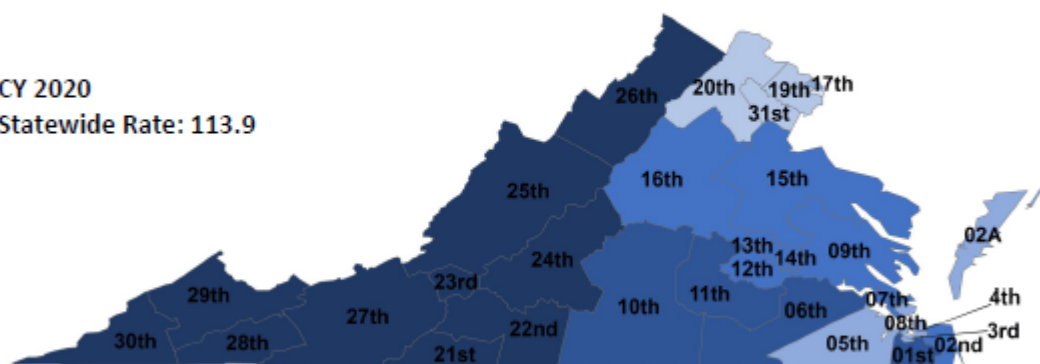
CY 2010
Statewide Rate: 9.3



CY 2015
Statewide Rate: 26.4



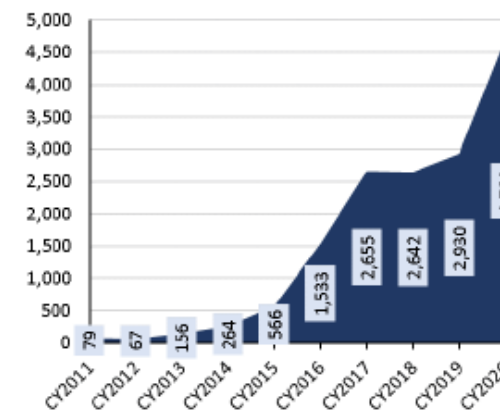
CY 2020
Statewide Rate: 113.9



Report of Drug Cases Submitted in 2020

Illicit Synthetic Opioids

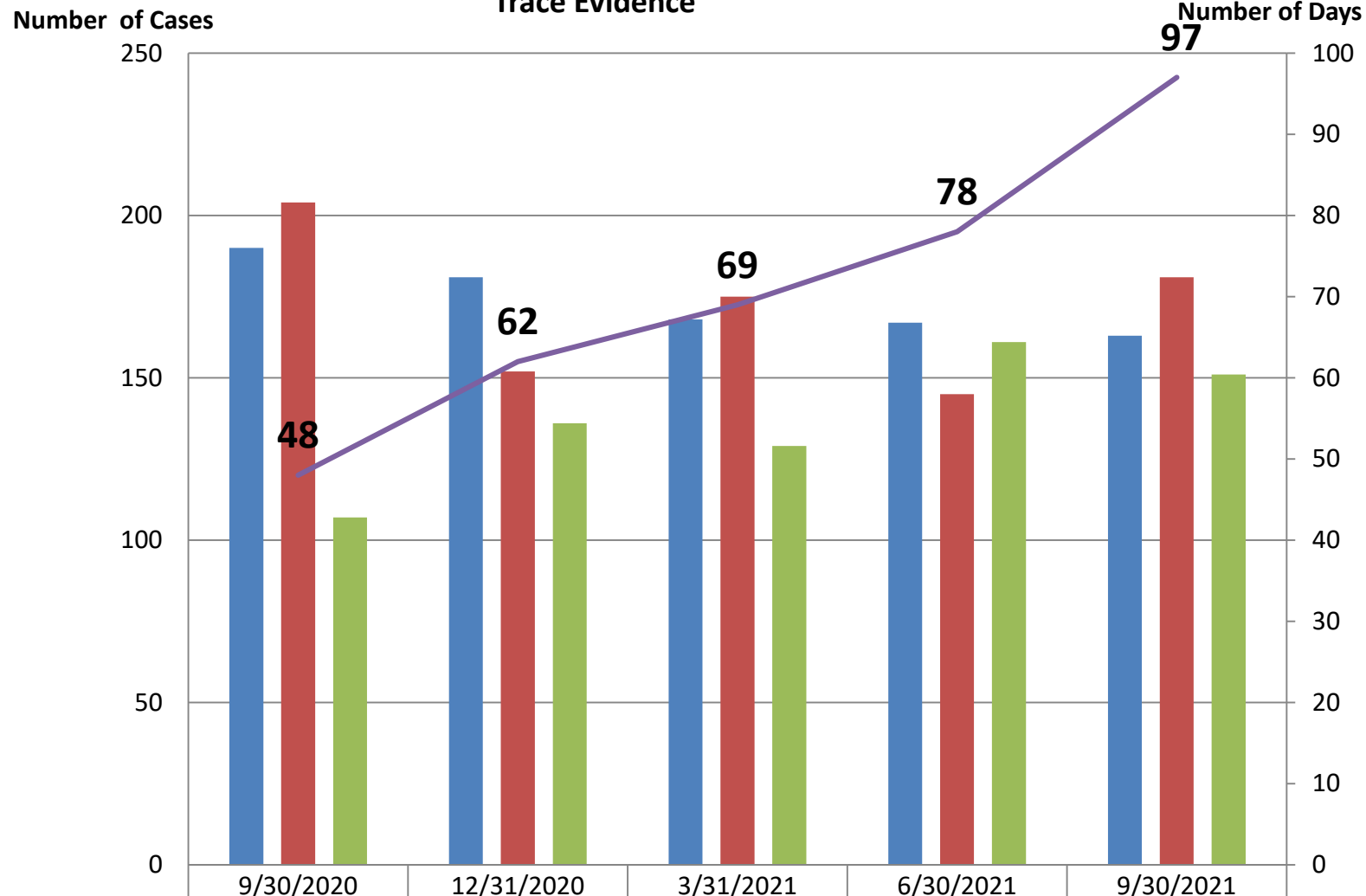
Illicit Synthetic Opioid Submissions
CY2011-2020



Illicit Synthetic Opioids Identified*

Substance Identified	CY2012-14	CY2015-17	CY2018-20
Fentanyl	350	3,405	9,876
Fentanyl Analogs			
Acetyl Fentanyl	3	82	516
FIBF	0	403	224
Furanyl Fentanyl	0	770	25
Other	0	142	182
Other			
Other	135	364	212

Trace Evidence



■ Cases Received*	190	181	168	167	163
■ Cases Completed	204	152	175	145	181
■ Caseload	107	136	129	161	151
— Average Days in System	48	62	69	78	97



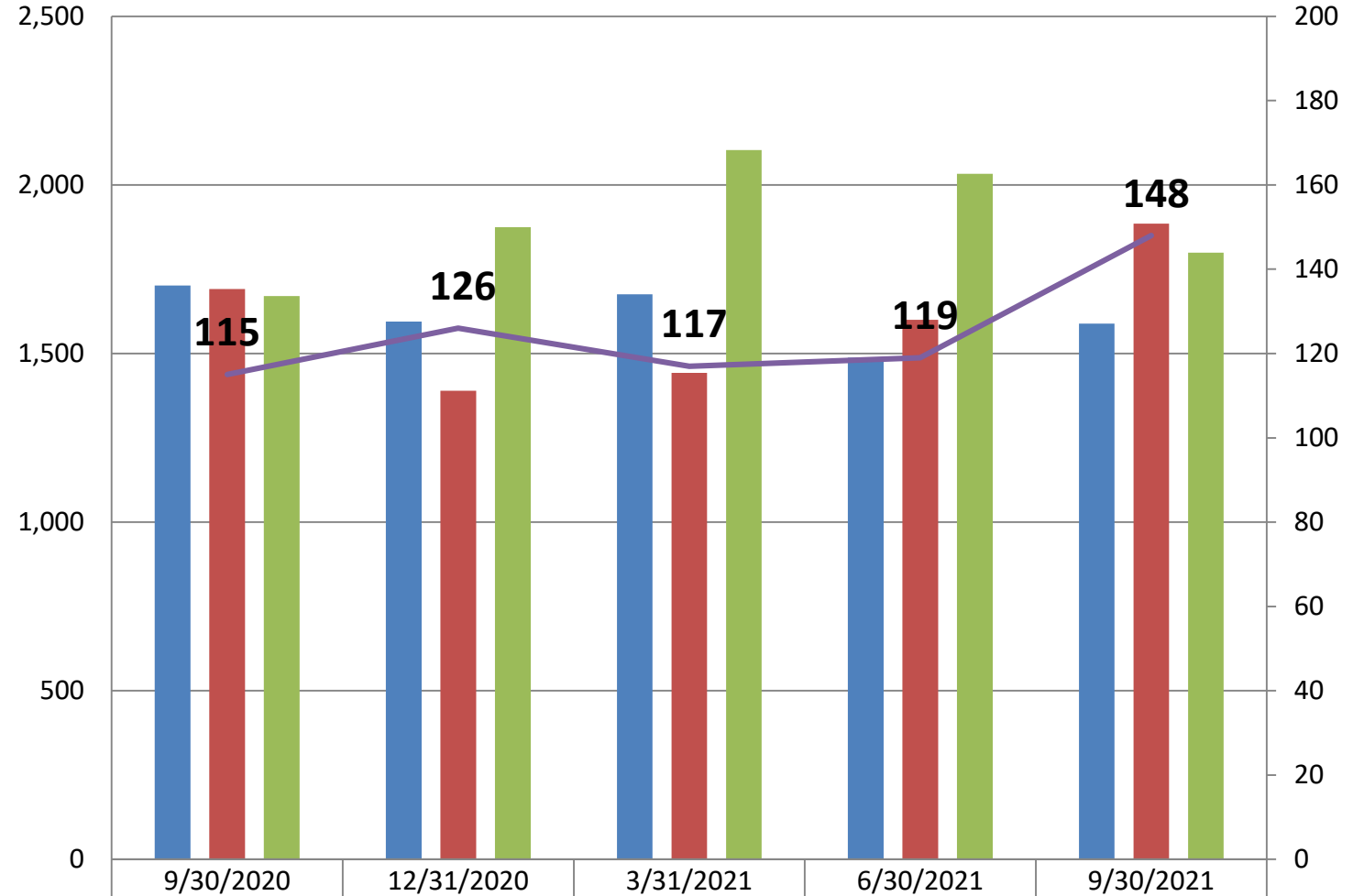
Forensic Biology

- Updates to analysis of complex DNA mixtures
 - STRmix[®] is an additional statistical software nearing implementation
 - Initially 16 examiners statewide
 - TrueAllele[®] will still be used as well
 - 4 examiners statewide
- National pipette tip shortage - Monitoring other supplies

Forensic Biology (DNA)

Number of Cases

Number of Days



Cases Received*	1,702	1,595	1,676	1,488	1,589
Cases Completed	1,691	1,390	1,443	1,600	1,885
Caseload	1,670	1,875	2,103	2,033	1,799
Average Days in System	115	126	117	119	148



Toxicology

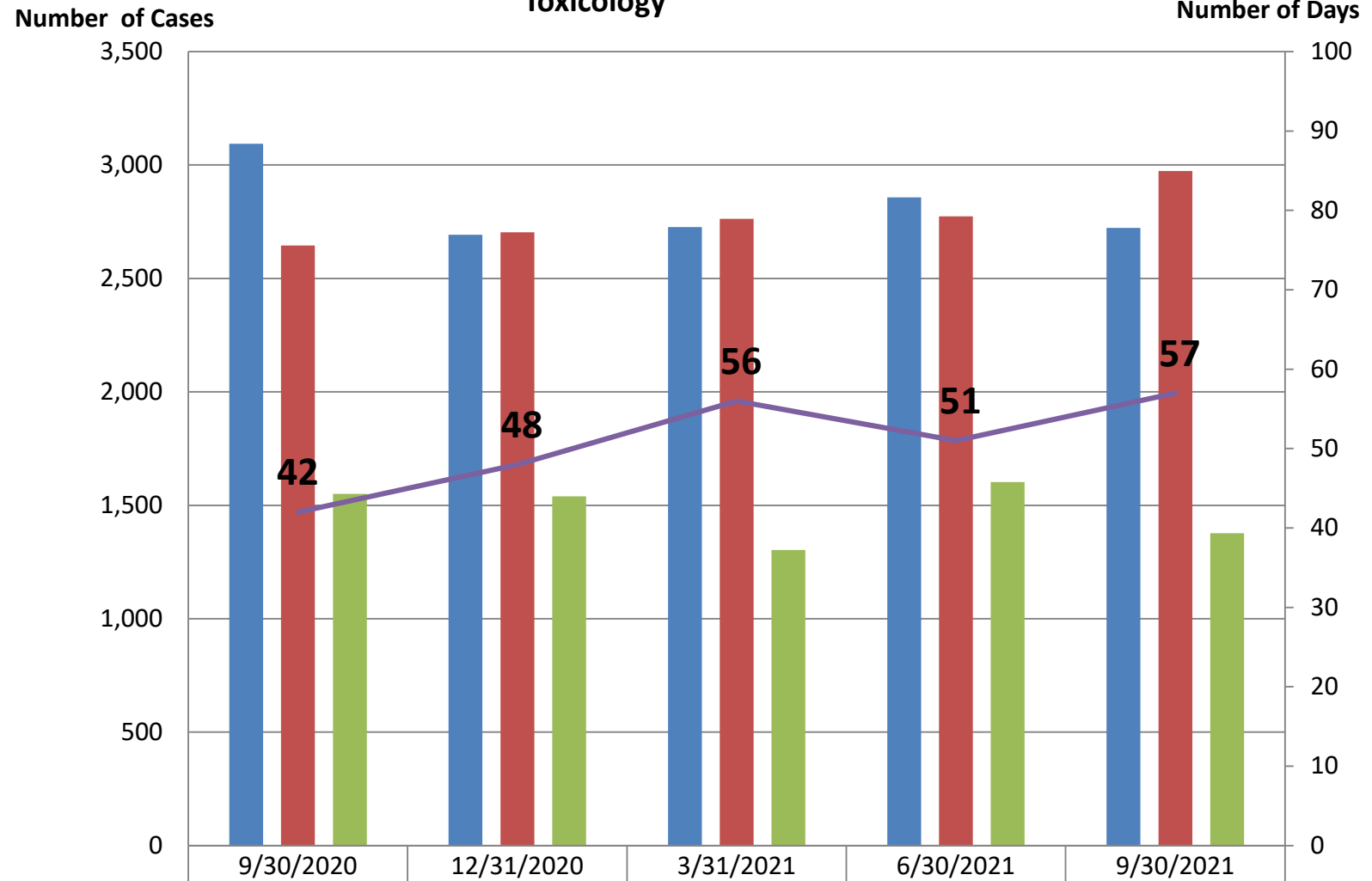
- Central and Western Toxicology rebuilding capacity
- MOU with OCME for outsourcing cases to private laboratory, particularly Central and Western Districts
- Capacity analysis performed to support staffing requests
- Other Considerations
 - Impact of marijuana legalization on Driving Under the Influence of Drugs sample volume and sample contents
 - Potential policy changes increasing drug screening of high alcohol driver samples



Toxicology Submissions by Exam

	2017	2018	2019	2020	Difference 2019 to 2020	Difference 2017 to 2020
OCME	4,135	4,342	4,239	5,059	19%	22%
DUID	2,225	2,645	2,429	2,892	19%	30%
DUI	2,077	2,493	2,283	2,103	-8%	1%
Other	1,463	873	781	770	-1%	-47%
Total	9,900	10,353	9,732	10,824	11%	9%

Toxicology



■ Cases Received*	3,094	2,692	2,726	2,858	2,723
■ Cases Completed	2,645	2,703	2,763	2,774	2,974
■ Caseload	1,551	1,540	1,303	1,602	1,377
— Average Days in System	42	48	56	51	57



Toxicology Methodology

- Methodology implemented
 - Miscellaneous Basic Drugs Quantitation and Confirmation by LCMSMS
 - Fentanyl Derivative Quantitation
- Validation completed
 - Barbiturates Quantitation and Confirmation by LCMSMS
- Instrumentation allocated per laboratory

Budget and Resources



Biennial FY22 Budget

Service Areas	General Fund (FY22)	Federal Funds (FY22)	ARPA (FY22)	Grand Total (FY22)	% of overall budget
Forensic Biology	\$12,281,935	\$1,758,391		\$14,040,326	25%
Chemistry	\$14,424,012	\$38,000		\$14,462,012	26%
Toxicology	\$8,615,582	\$565,551		\$9,181,133	16%
Physical Evidence	\$9,633,931	\$54,600		\$9,688,531	17%
Forensic Training	\$366,856	\$17,550		\$384,406	1%
Administration/Facilities/IT	\$8,003,338	\$4,838	\$505,375	\$8,513,551	15%
Grand Total	\$53,325,654	\$2,438,930	\$505,375	\$56,269,959	100%



Grant Awards Received

FY 2022 Highway Safety (DMV) Grant for Breath Alcohol (BA) Section

- Period: Oct. 1, 2021 – September 30, 2022
- Funds for Breath Alcohol:
 - Funding for 1 BA Forensic Scientist
 - Reimbursement for law enforcement officers traveling for breath alcohol instruction
 - Continuing education for DFS BA Staff
 - Classroom supplies/iClickers
- Federal Funds Awarded: \$278,055
- DFS Match (in-kind): \$69,514

FY 2022 Highway Safety (DMV TRENDS Office) Grant for Toxicology Section

- Period: Oct. 1, 2021 – September 30, 2022
- Funds for Toxicology:
 - Continuation of 4 part-time Forensic Laboratory Specialist (FLS) positions
 - Additional 4 full-time FLS positions
- Federal Funds Awarded: \$293,313
- DFS Match (cash/in-kind): \$73,329



Grant Awards Received

- DCJS Byrne Justice Assistance Grant Funding
 - Continued funding for 3rd Forensic Training Section Instructor (part-time)
 - Grant Period: July 1, 2021 – June 30, 2024
 - \$45,407 per year includes funding for salary and course supplies
- Ensures 3 Forensic Science Academy sessions while maintaining Short Course offerings



Grant Awards Pending

FY 2021 DNA Capacity Enhancement and Backlog Reduction (CEBR) Grant

DFS applied to the Bureau of Justice Assistance for funds under this program to increase/maintain capacity in the Forensic Biology and the DNA Data Bank Sections by continuing to fund personnel, purchase supplies, and add items of equipment. Funds will also be used to provide the required continuing education for DNA scientists.

Total funds requested: Federal = \$1,743,265

FY 2021 Paul Coverdell Forensic Science Improvement Grant

DCJS applied for these funds on behalf of DFS and the OCME. DFS will utilize funds to provide continuing education to scientific staff in the various disciplines. DFS also plans to use funds to contract with the LIMS provider (TCSC) to increase capabilities of the LIMS to allow for a paperless, electronic review process for the generation of reports.

Total funds requested: \$508,328

DFS Portion = \$254,164

American Rescue Plan Act Spending Proposal



To address public safety “by investing in technology and equipment to allow law enforcement to more efficiently and effectively respond to the rise in gun violence resulting from the pandemic”

– [Coronavirus State and Local Fiscal Recovery Funds FAQ, p. 20](#)

- Firearms submissions to DFS increased 14% in CY2020
 - Providing investigative leads in violent crimes involving guns can help reduce/prevent further gun violence and therefore increase public health
1. Add equipment for three (3) additional Firearms forensic scientists - \$300,000 FY22
 2. Purchase additional NIBIN equipment - \$205,375 FY22 with \$25,000 in future years

<https://dpb.virginia.gov/forms/forms.cfm?search=American%20Rescue%20Plan%20Act%20Budget%20Request%20Submissions>



Thank you!