Cuyahoga County Medical Examiner's Office

STATISTICAL REPORT

2023

2023

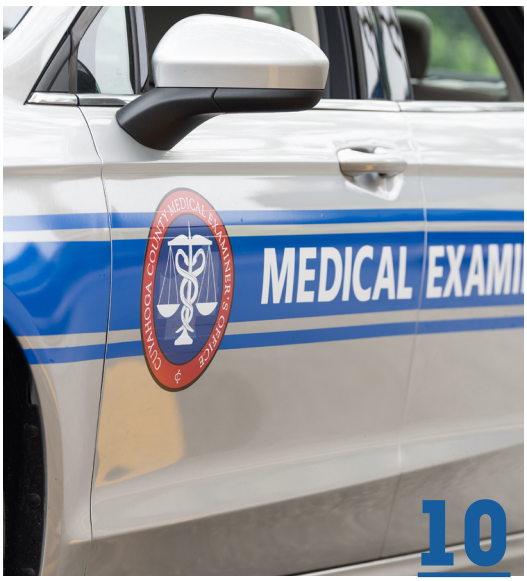
Cuyahoga County Medical Examiner's Statistical Report

Chris Ronayne, Cuyahoga County Executive

Thomas P. Gilson, M.D., Medical Examiner

Samuel R. Gerber Building, 11001 Cedar Avenue, Cleveland, Ohio 44106

STATISTICS



Christopher Harris, EDITOR | DESIGN DIRECTOR
Paula Wallace, STATISTICAL DATA | CODING
Kate Snyder, PHOTOGRAPHY
Jason Bielinski, PHOTOGRAPHY
Paul Ferrer, PHOTOGRAPHY
Amy Koons, PHOTOGRAPHY
Greg Wilson, PHOTOGRAPHY

LETTER
From the Medical Examiner

This eighty-fifth annual report of the Cuyahoga County Medical Examiner's Office and Regional Forensic Sciences Laboratory has been prepared in accordance with our tradition of commitment to excellence and accountability to our community.

The mission of the Medical Examiner's Office and Laboratory will always remain the provision of the highest quality professional services to the residents of Cuyahoga County. The report that follows documents our efforts as an agency to achieve this goal.

Mass disasters were prominent in the news in 2023, with wildfires on the island of Maui and a toxic spill following a train derailment closer to home in East Palestine, Ohio. Substance use disorder continued to claim the lives of many residents, and Ohio voted to legalize marijuana. The impact on the county's health will be evident in the years to come, and the ME Office is poised to monitor the significance of this legislation.

The county welcomed a new Executive, Chris Ronayne, and the promise of new leadership was inspiring. At the Medical Examiner's Office, we bid farewell to laboratory specialist Dianne Nunnally, who retired after a 44-year career spanning five decades and three coroners, dating back to Dr. Samuel Gerber. It is with profound gratitude that we dedicate this iteration of the Statistical Report to Dianne in recognition of her dedicated service.

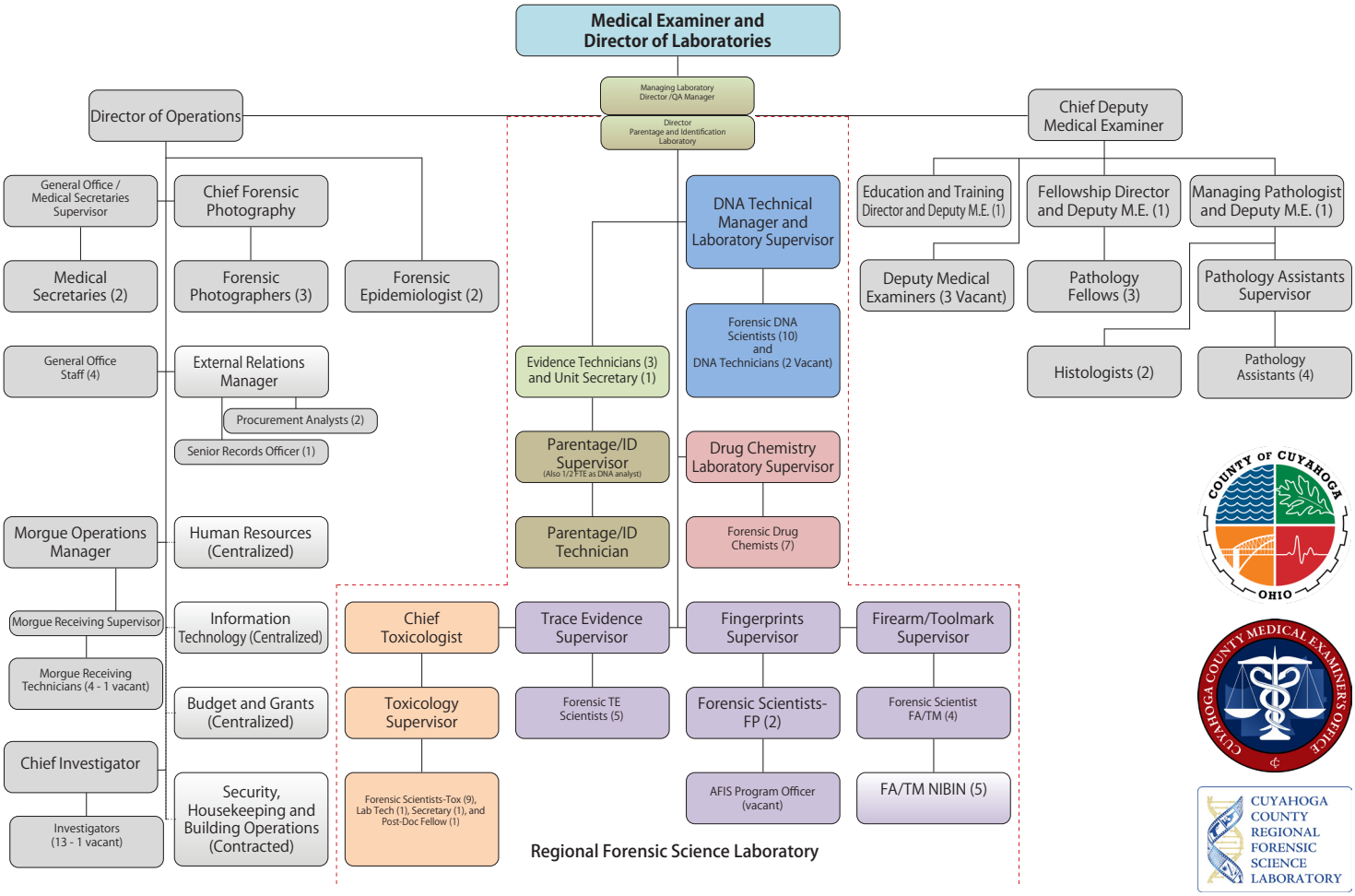
Finally, we anticipate changes to the format of the Statistical Reports over the next few years as we seek to simplify the presentation of data and refine it to improve relevance to current issues.

Thomas P. Gilson, MD
Cuyahoga County Medical Examiner

DID YOU KNOW?

The Cuyahoga County Medical Examiner's Office received the 2016 August Vollmer Excellence in Forensic Science award, presented by the International Association of Chiefs of Police, which honors contributions to forensic science .

THE 2023 CUYAHOGA COUNTY MEDICAL EXAMINER'S OFFICE ORGANIZATIONAL CHART



The Cuyahoga County Medical Examiner's Office is one of the country's most accredited medical examiner/coroner offices.

DID YOU KNOW?

Foreword

This report is primarily a statistical summary of our experience. The information set forth conforms to the established patterns of previous reports so that comparisons can be made readily. The tabular format is identical with earlier reports. New tables, charts and maps have been added to further emphasize certain data.

All cases recorded here have been summarized from various aspects. Cases are basically classified according to the official Medical Examiner's Verdict as to the manner of death. Thus, the following categories are used:

ACCIDENTS IN THE HOME
ACCIDENTS WHILE AT WORK
VEHICULAR ACCIDENTS
ACCIDENTS IN OTHER PLACES
HOMICIDES
SUICIDES
NATURAL CAUSES
CAUSE AND ORIGIN UNDETERMINED

Cases are further subdivided according to geographical location, monthly incidence, mode, sex, race, age, and ethnicity of victims, and ethanol incidence by month, sex, race, and mode. Additional relationships are indicated through specific tables for various types of cases.

Persons desiring further information should direct their requests to the Medical Examiner. Every effort will be made to supply data requested.

ACCREDITATIONS

Cuyahoga County Medical Examiner's Office

The Cuyahoga County Medical Examiner's Office and the Cuyahoga County Regional Forensic Science Laboratory aspire to the highest standards of our profession. The office and laboratories have received the following accreditations at the time of publication:

American Association for the Advancement of Blood & Biotherapies (AABB) - AABB advances the practice and standards of transfusion medicine and cellular therapies to optimize patient and donor care and safety. There are over 40 AABB-accredited laboratories in the U.S. that offer DNA testing to verify a stated biological relationship.

ANSI National Accreditation Board (ANAB) - ANAB has provided accreditation of forensic service providers since 1982, making us the longest established provider of accreditation based on ISO standards for forensic agencies in the United States.

American Board of Forensic Toxicology (ABFT) - The purpose of the American Board of Forensic Toxicology is to establish and enhance voluntary standards for the practice of forensic toxicology and for the examination and recognition of scientists and laboratories providing forensic toxicology services.

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FBI Quality Assurance Standards for Inclusion in the Combined DNA Index System/National DNA Index System (CODIS/NDIS) - The DNA Identification Act of 1994 requires that the FBI Laboratory ensure that all DNA laboratories that participate in the National DNA Index System (NDIS) demonstrate compliance with the standards issued by the FBI.

Accreditation Council of Graduate Medical Education (ACGME) - The Accreditation Council for Graduate Medical Education (ACGME) is a private professional organization responsible for the accreditation of 8,887 residency education programs.

National Association of Medical Examiners (NAME) - The National Association of Medical Examiners (NAME) is the national professional organization of physician medical examiners, medicolegal death investigators and death investigation system administrators who perform the official duties of the medicolegal investigation of deaths of public interest in the United States.

WHAT IS A MEDICAL EXAMINER'S CASE?

In November 2009, the residents of Cuyahoga County voted to reform County Government in order to significantly improve the County's economic competiveness. As part of the restructuring, the elected office of Coroner was abolished and replaced with a Medical Examiner, appointed by the County Executive and subject to confirmation by the Council. **Section 5.03 of Article V** of the **Charter of Cuyahoga County** defines the powers, duties, and qualifications of the Medical Examiner and states, in part, "All powers now or hereafter vested in or imposed upon county coroners by general law shall be exercised by the Medical Examiner".

Chapter 313 of the **Ohio Revised Code** contains the laws and rules specific to the office of "coroner". **Section 313.12** of the Revised Code of the State of Ohio requires the Coroner (Medical Examiner) be given notice when "...any person dies as a result of

CRIMINAL or other

VIOLENT means, by

CASUALTY, by

SUICIDE, or in any

SUSPICIOUS or **UNUSUAL** manner, when any person, including a **CHILD UNDER TWO YEARS OF AGE** dies **SUDDENLY** when in apparent health..."

Section 313.09 of the Revised Code requires the Medical Examiner to keep a complete record of all cases coming under his/her jurisdiction. Records are public and the availability of these records for inspection and copying is defined in **Section 313.10**

Section 313.11 of the Revised Code defines unlawfully disturbing a decedent while **Section 313.12** explains whose duty it is to notify the Medical Examiner of the known time, place, manner and circumstances of a reportable death.

The Revised Code of the State of Ohio also outlines the role the Medical Examiner has with regard to taking charge of a dead body (§ 313.13), the responsibility for notifying known relatives of the decedent (§ 313.14), and securely storing their possessions. When firearms are included in the valuable personal effects of a deceased person, Section 313.141 describes their disposition.

In Ohio, the Medical Examiner has considerable legal authority when investigating circumstances of death. These abilities are delineated in Section 313.17 and the law concerning the use of a Medical Examiner's laboratory for emergency or law enforcement purposes are contained in Section 313.21 of the Ohio Revised Code.

Coroners and Medical Examiners often work closely with public health and law enforcement officials. Protecting the well-being of the children of Cuyahoga County is a common priority. As such, Section 307.622 defines the Medical Examiner's duty as a member of a child fatality review board. Additionally, Section 2151.421 requires the reporting of child abuse and/or neglect by, amongst others, the Medical Examiner.

In addition to the aforementioned, there are dozens of other laws governing the Medical Examiner contained in the Revised Code of the State of Ohio. These laws vary greatly, covering subjects as diverse as DNA laboratory databases (**§109.573**), organ and tissue donation (**§313.30**, **2108.26**, **2108.262**, **2108.263**, **2108.266**, **2108.267**, and **2108.27**), the statement and certification of facts for vital statistics (**§3705.16**, **3705.17**, **3705.22**, and **3705.29**), and traffic rules for the Medical Examiner's vehicles (**§4511.042**, **4511.45**, and **4513.171**).

TABLE 1 TYPES OF FATALITIES AND MISCELLANEOUS INFORMATION

	2022	2023
Accidents in the Home	932	902
Accidents While at Work	14	10
Vehicular Accidents	119	152
Accidents in Other Places	417	401
Homicides	238	233
Suicides	177	203
Natural Causes	1,109	1005
Undetermined Causes	23	28
No Manner Issued	6	7
Cases Reported - Admitted	3,035	2,941
Cases Reported - Not Admitted	4,067	3,621
Autopsies (Hospitals Included)	1,217**	944**
Autopsies Performed for Other Counties	469	475
Unidentified Bodies	0	2
Unclaimed Bodies	152	146
Donated Bodies	0	0
Exhumations	1	0
Scene Investigations	1,422	1,405
Bodies Transported By/By Order of	2,392	2,313
Bodies Transported to Office	2,946	2,849
Deaths in Cuyahoga County	14,676	13,660
Percentage of Deaths Admitted	20.68%	21.53%

***Includes 6 autopsies performed at hospitals**
****Includes 2 autopsies performed at hospitals**

2023 TYPES OF FATALITIES - GENDER, RACE, ETHNICITY, AUTOPSY

TABLE 2

Type of Fatality	Total	Gender		Race				Hispanic	Autopsied Cases*	% of Total Cases
		Male	Female	White	Black	Asian	Other			
Accidents in the Home	902	525	377	644	250	6	2	31	194	6.60%
Accidents While at Work	10	9	1	9	1	0	0	1	6	0.20%
Vehicular Accidents	152	110	42	99	51	1	1	5	62	2.11%
Accidents in Other Places	401	236	165	291	109	1	0	8	85	2.89%
Homicides	233	191	42	41	192	0	0	12	233	7.92%
Suicides	203	161	42	141	57	5	0	6	75	2.55%
Natural Causes	1,005	658	347	648	351	5	1	19	259	8.81%
Undetermined Causes	28	19	9	11	17	0	0	1	26	0.88%
No Manner Issued*	5	3	2	1	6	0	0	0	4	0.14%
Total	2,939	1,912	1,027	1,885	1,034	18	4	83	944	32.10%

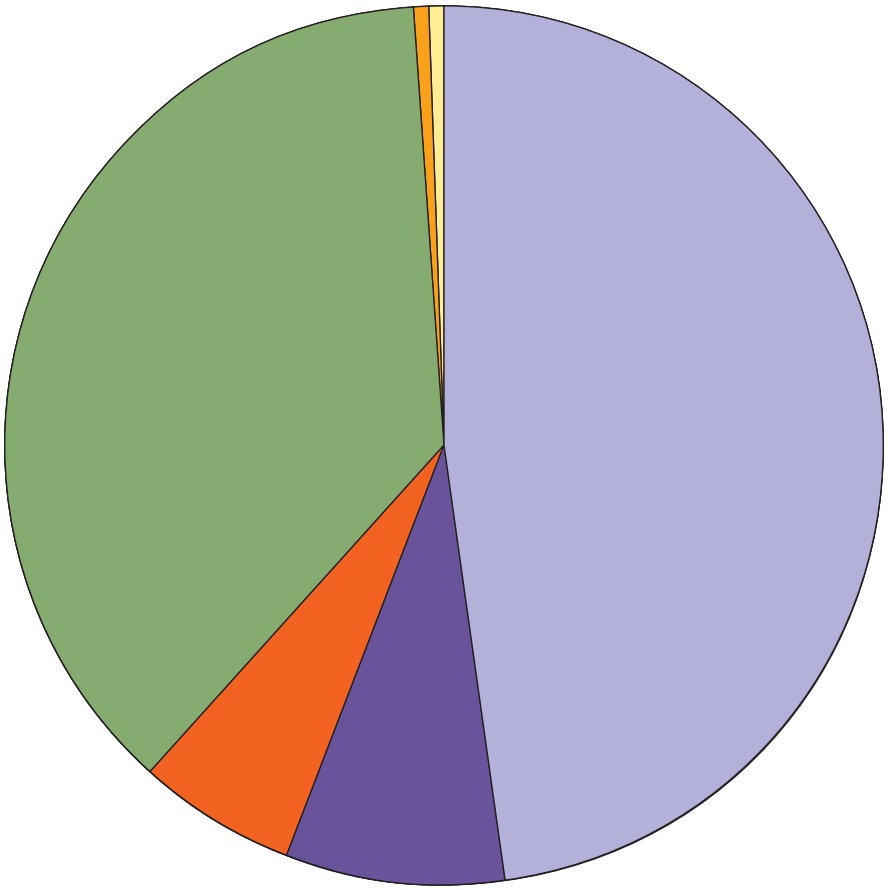
***Gender is unknown for 2 cases**
****Includes 2 autopsies performed at hospitals**

TABLE 3 2023 TYPES OF FATALITIES - ETHANOL INCIDENCE

	Number of Cases	Number of Cases Tested	Percentage of Cases Tested	Number Positive of Those Tested	Percentage Positive of Those Tested
Accidents in the Home	902	528	58.54%	138	26.14%
Accidents While at Work	10	6	60.00%	0	0.00%
Vehicular Accidents	152	100	65.79%	32	32.00%
Accidents in Other Places	401	163	40.65%	43	26.38%
Homicides	233	228	97.85%	70	30.70%
Suicides	203	176	86.70%	64	36.36%
Natural Causes	**1,005**	**531**	**52.84%**	**127**	**23.92%**
Undetermined Causes	28	16	57.14%	5	31.25%
No Manner Issued	7	2	28.57%	0	0.00%
Total Cases	**2,941**	**1,750**	**59.50%**	**479**	**27.37%**

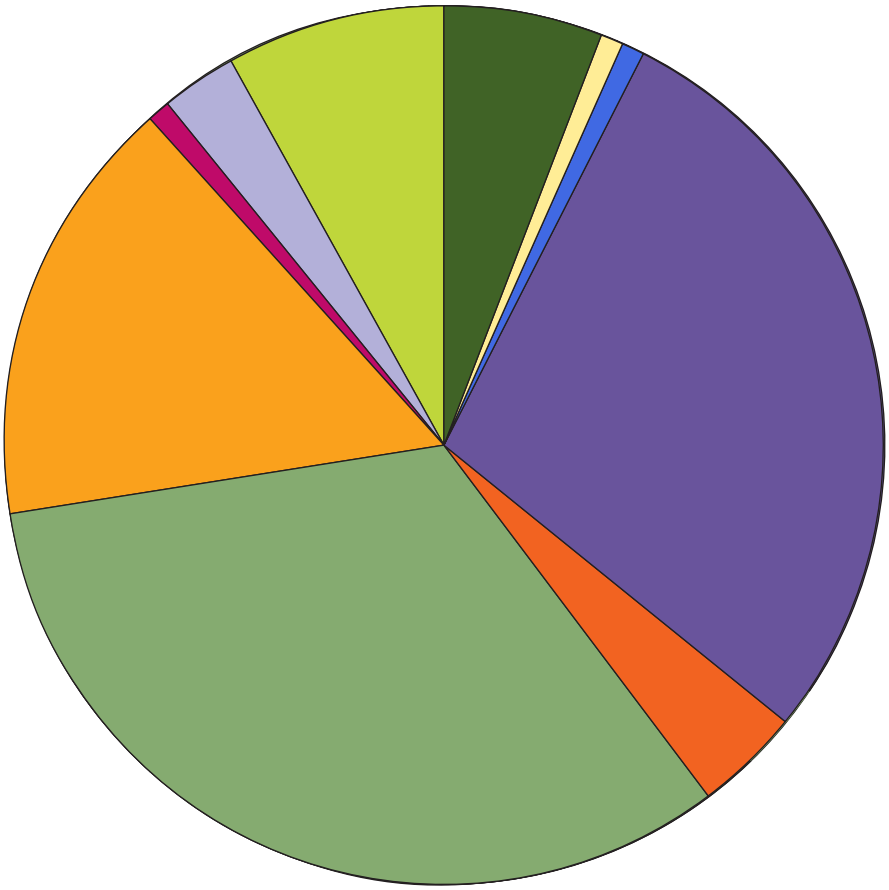
TYPES OF CASES RECEIVED AT THE CUYAHOGA COUNTY MEDICAL EXAMINER'S OFFICE

2,941 CASES (2023)



- ALL ACCIDENTS (1,465)
- NATURAL CAUSES (1,005)
- HOMICIDES (233)
- SUICIDES (203)
- UNDETERMINED CAUSES (28)
- NO MANNER (7)

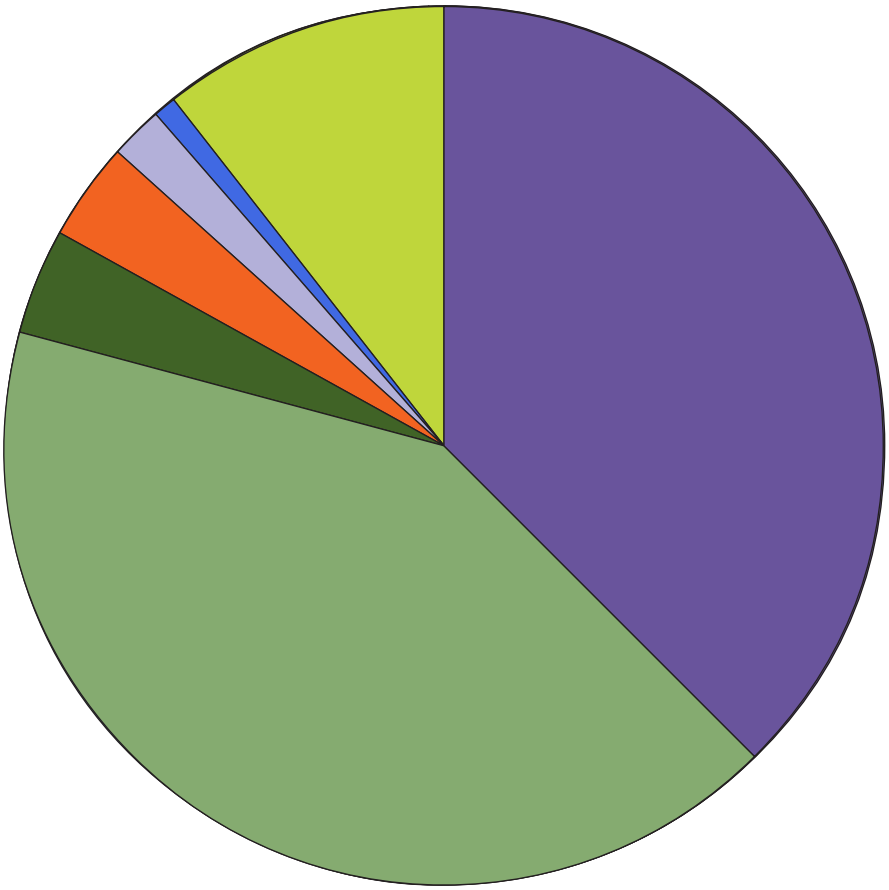
1,929 CASES (2023)



- POISONING (OVERDOSES) (636)
- FALLING (550)
- SHOOTING (306)
- VEHICULAR (152)
- ASPHYXIA (115)
- OTHERS (71)
- UNDETERMINED (57)
- BLUNT VIOLENCE (17)
- CARBON MONOXIDE (14)
- STABBING (11)

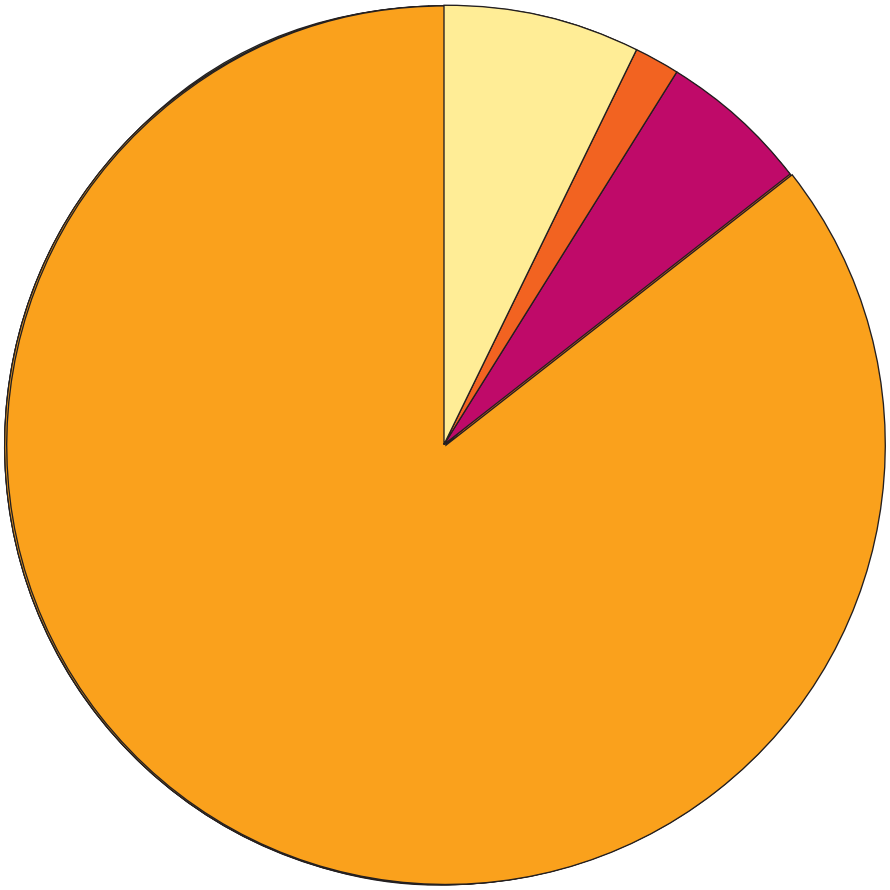
* Cases without a manner of death are excluded

1,465 CASES (2023)



- POISONING (610)
- FALLING (550)
- VEHICULAR (152)
- ASPHYXIA (60)
- OTHERS (52)
- UNDETERMINED (29)
- CARBON MONOXIDE (12)

233 CASES (2023)

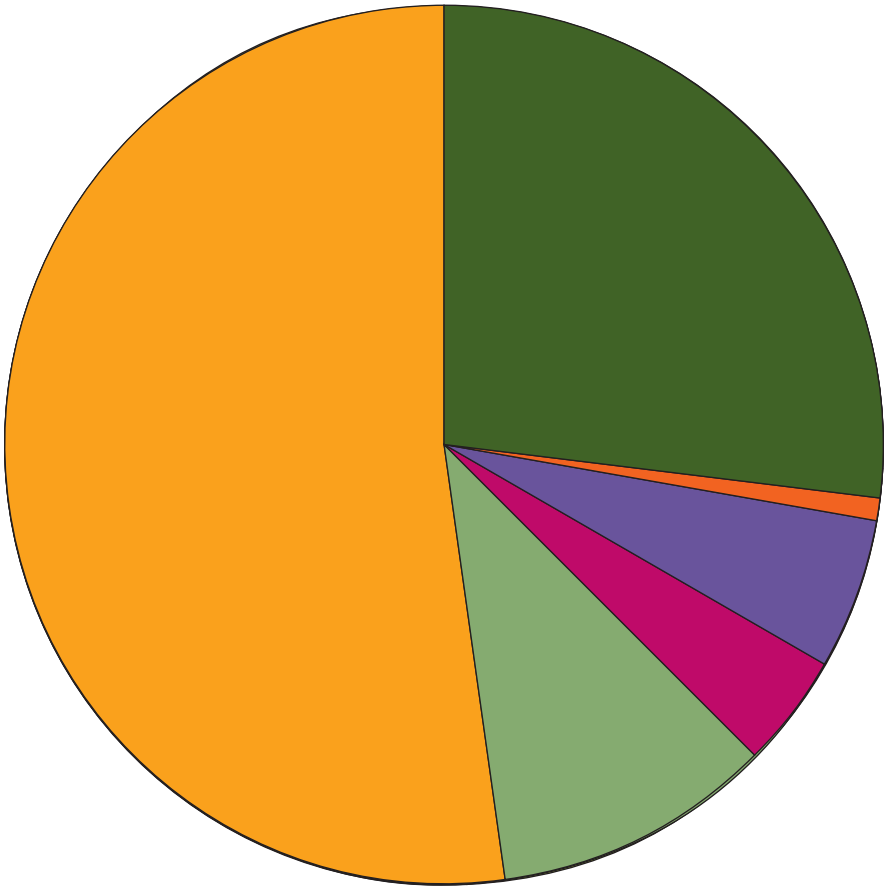


- SHOOTING (199)
- BLUNT VIOLENCE (17)
- OTHERS (13)
- CUTTING AND STABBING (4)

LEGAL INTERVENTION HOMICIDES

	Male	Female	Total
Black	1	0	1
White	2	0	2
Total	**3**	**0**	**3**

204 CASES (2023)



- SHOOTING (106)
- ASPHYXIA (55)
- POISONING (21)
- CUTTING AND STABBING (9)
- JUMPING (11)
- OTHERS (2)

TABLE 4 TOTAL CASES BY MONTH AND TYPE OF FATALITY

Type of Fatality	January		February		March		April		May		June		July		August		September		October		November		December		Total		Grand Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Accidents in the Home	40	23	35	33	52	35	53	30	48	38	47	28	43	27	37	34	45	46	44	28	53	30	28	25	525	377	902
Accidents While at Work	0	0	2	0	1	0	1	0	2	1	0	0	1	0	2	0	0	0	0	0	0	0	0	0	9	1	10
Vehicular Accidents	14	5	1	5	6	3	5	3	11	3	9	4	12	7	20	1	11	2	13	3	4	4	4	2	110	42	152
Accidents in Other Places	16	21	21	15	23	13	13	10	20	17	24	8	27	12	22	10	17	14	20	15	17	19	16	11	236	165	401
Homicides	19	4	16	4	8	2	13	1	26	6	17	5	22	7	11	3	15	4	19	2	16	2	9	2	191	42	233
Suicides	12	2	12	6	11	3	13	1	13	7	20	4	9	5	14	4	18	3	12	2	15	3	12	2	161	42	203
Natural Causes	58	26	52	32	51	28	59	32	54	19	41	39	66	28	50	25	52	26	62	33	59	25	54	34	658	347	1,005
Undetermined	0	0	2	0	2	3	1	0	0	0	4	1	1	3	3	0	2	1	1	0	1	1	2	0	19	9	28
No Manner Issued	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	1	0	3	2	5
Total	159	81	141	95	154	88	158	77	174	91	162	89	181	89	161	77	160	97	171	83	165	84	126	76	1,912	1,027	2,939

***Gender is unknown for 2 cases**

TOTAL CASES BY AGE GROUP AND TYPE OF FATALITY

TABLE 5

Type of Fatality	< Than 1		1-4		5-9		10-14		15-19		20-24		25-29		30-34		35-39		40-44		45-49		50-54		55-59		60-64		65-69		70-74		75-79		80 and Over		Total		Grand Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Accidents in the Home	7	8	1	1	2	1	1	0	2	0	4	3	19	8	25	15	39	17	44	16	36	19	36	20	47	25	54	24	45	28	31	25	32	26	100	141	525	377	902
Accidents While at Work	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	2	0	1	0	1	0	1	0	1	0	0	1	0	0	0	0	9	1	10
Vehicular Accidents	1	0	1	0	1	0	1	0	2	3	10	5	11	1	11	3	7	3	7	5	8	2	7	2	9	1	9	4	6	5	5	2	6	2	8	4	110	42	152
Accidents in Other Places	0	1	0	0	1	0	0	0	3	0	3	2	9	8	17	5	14	7	21	4	12	2	14	8	23	5	15	9	18	5	22	4	15	11	49	94	236	165	401
Homicides	1	1	6	2	0	3	4	1	22	0	32	6	28	4	25	10	24	2	17	4	8	3	6	2	3	0	6	2	5	1	3	0	1	0	0	0	191	42	233
Suicides	0	0	0	0	0	0	2	1	5	1	13	4	17	6	15	7	13	4	18	2	6	2	15	5	15	0	16	6	7	2	7	2	3	0	9	0	161	42	203
Natural Causes	4	1	4	3	3	1	1	1	1	0	2	0	6	5	20	7	24	8	21	22	34	17	55	21	58	30	115	38	106	43	82	41	68	37	54	72	658	347	1,005
Undetermined Causes	2	1	0	0	1	0	0	0	0	0	0	0	1	0	0	1	2	0	4	2	1	1	1	1	0	2	1	0	2	1	2	0	0	0	1	0	19	9	28
No Manner Issued	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	5
Total	18	14	12	6	8	5	9	3	35	4	64	20	92	32	114	48	123	41	133	55	107	46	135	59	156	63	217	83	190	85	152	75	125	76	221	311	1,912	1,027	2,939

***Age is unknown for 2 cases**

Cities	Injury-Related Fatalities								Other Fatalities				Grand Total
	Accidental					Violent							
	Accidents in the Home	Accidents While at Work	Vehicular Accidents	Accidents in Other Places	Total Accidents	Homicides	Suicides	Total Violence	Natural Causes	Undetermined Causes	No Manner Issued	Total Other Deaths	
Cleveland	532	6	108	214	860	189	86	275	471	22	3	496	1,631
Bay Village	4	0	0	1	5	0	0	0	4	0	0	4	9
Beachwood	18	0	0	15	33	0	1	1	19	0	0	19	53
Bedford	0	0	0	2	2	3	1	4	9	0	0	9	15
Bedford Heights	3	0	0	0	3	0	2	2	12	0	0	12	17
Berea	5	0	0	0	5	0	1	1	14	0	0	14	20
Brecksville	3	0	0	1	4	0	1	1	6	0	0	6	11
Broadview Heights	3	0	0	3	6	0	3	3	5	0	0	5	14
Brooklyn	5	0	0	3	8	1	2	3	7	0	0	7	18
Brook Park	4	0	1	2	7	0	1	1	4	1	0	5	13
Cleveland Heights	4	0	0	1	5	3	6	9	22	0	0	22	36
East Cleveland	11	0	0	1	12	4	0	4	20	2	0	22	38
Euclid	38	1	8	6	53	3	7	10	42	1	0	43	106
Fairview Park	1	0	0	2	3	0	3	3	8	0	0	8	14
Garfield Heights	13	0	5	6	24	9	6	15	22	0	0	22	61
Highland Heights	1	0	0	1	2	0	0	0	3	0	0	3	5
Independence	1	0	4	1	6	0	2	2	2	0	0	2	10
Lakewood	13	0	0	2	15	0	5	5	22	1	0	23	43
Lyndhurst	1	0	0	0	1	0	3	3	6	0	0	6	10
Maple Heights	8	0	0	2	10	2	2	4	15	0	0	15	29
Mayfield Heights	31	0	7	10	48	3	7	10	33	0	1	34	92
Middleburg Heights	23	1	4	26	54	0	11	11	30	0	0	30	95
North Olmsted	5	0	0	4	9	2	6	8	17	0	0	17	34
North Royalton	0	0	1	3	4	0	0	0	13	0	0	13	17
Olmsted Falls	3	0	0	2	5	0	1	1	4	0	0	4	10
Parma	61	0	2	22	85	2	16	18	58	1	2	61	164
Parma Heights	1	0	1	2	4	0	2	2	13	0	0	13	19
Pepper Pike	0	0	0	0	0	0	0	0	1	0	0	1	1
Richmond Heights	1	0	0	0	1	0	0	0	4	0	0	4	5
Rocky River	7	0	0	4	11	0	4	4	7	0	0	7	22
Seven Hills	2	0	0	1	3	0	0	0	5	0	0	5	8

Cities	Injury-Related Fatalities								Other Fatalities				Grand Total
	Accidental					Violent							
	Accidents in the Home	Accidents While at Work	Vehicular Accidents	Accidents in Other Places	Total Accidents	Homicides	Suicides	Total Violence	Natural Causes	Undetermined Causes	No Manner Issued	Total Other Deaths	
Shaker Heights	2	0	0	0	2	2	2	4	4	0	0	4	10
Solon	3	0	0	0	3	1	4	5	5	0	0	5	13
South Euclid	4	0	0	0	4	0	0	0	8	0	0	8	12
Strongsville	26	0	1	15	42	1	5	6	21	0	0	21	69
University Heights	0	0	2	0	2	0	1	1	3	0	0	3	6
Warrensville Heights	9	0	4	7	20	7	1	8	21	0	1	22	50
Westlake	50	0	3	34	87	1	5	6	33	0	0	33	126
VILLAGES: Bentleyville	0	0	0	0	0	0	0	0	0	0	0	0	0
Bratenahl	0	0	0	0	0	0	0	0	0	0	0	0	0
Brooklyn Heights	0	0	0	0	0	0	1	1	1	0	0	1	2
Cuyahoga Heights	0	0	0	0	0	0	0	0	1	0	0	1	1
Gates Mills	0	0	0	0	0	0	0	0	0	0	0	0	0
Glenwillow	1	0	0	0	1	0	0	0	0	0	0	0	1
Highland Hills	0	0	0	0	0	0	1	1	0	0	0	0	1
Hunting Valley	0	0	0	0	0	0	0	0	0	0	0	0	0
Linndale	0	0	0	0	0	0	0	0	0	0	0	0	0
Mayfield Village	1	0	0	1	2	0	0	0	2	0	0	2	4
Moreland Hills	0	0	0	0	0	0	0	0	0	0	0	0	0
Newburgh Heights	0	0	0	0	0	0	0	0	1	0	0	1	1
North Randall	0	0	0	0	0	0	0	0	0	0	0	0	0
Oakwood Village	0	2	0	0	2	0	0	0	1	0	0	1	3
Orange Village	0	0	0	1	1	0	0	0	1	0	0	1	2
Walton Hills	0	0	1	0	1	0	1	1	1	0	0	1	3
Valley View	0	0	0	1	1	0	0	0	1	0	0	1	2
Woodmere	0	0	0	0	0	0	0	0	0	0	0	0	0
TOWNSHIPS: Chagrin Falls	1	0	0	3	4	0	1	1	2	0	0	2	7
Olmsted Township	3	0	0	2	5	0	2	2	1	0	0	1	8
Total	**902**	**10**	**152**	**401**	**1,465**	**233**	**203**	**436**	**1,005**	**28**	**7**	**1,040**	**2,941**

Cities	Injury-Related Fatalities								
	Accidental					Violent			
	Accidents in the Home	Accidents While at Work	Vehicular Accidents	Accidents in Other Places	Total Accidents	Homicides	Suicides	Total Violence	Grand Total
Cleveland	401	5	52	99	557	169	73	242	799
Bay Village	5	0	0	0	5	0	2	2	7
Beachwood	3	0	0	12	15	0	1	1	16
Bedford	2	0	0	3	5	5	2	7	12
Bedford Heights	5	0	1	1	7	2	2	4	11
Berea	9	0	0	1	10	0	1	1	11
Brecksville	0	1	0	1	2	0	1	1	3
Broadview Heights	5	0	2	3	10	0	3	3	13
Brooklyn	11	0	1	4	16	0	4	4	20
Brook Park	6	0	2	2	10	0	1	1	11
Cleveland Heights	10	0	6	3	19	4	7	11	30
East Cleveland	21	0	2	3	26	13	0	13	39
Euclid	42	1	11	1	55	7	8	15	70
Fairview Park	3	0	0	1	4	1	3	4	8
Garfield Heights	9	0	5	6	20	6	5	11	31
Highland Heights	4	0	0	3	7	0	0	0	7
Independence	2	0	6	0	8	0	2	2	10
Lakewood	16	0	0	3	19	1	5	6	25
Lyndhurst	3	0	0	0	3	0	4	4	7
Maple Heights	12	0	1	2	15	7	2	9	24
Mayfield Heights	7	0	2	3	12	0	4	4	16
Middleburg Heights	7	0	1	13	21	0	6	6	27
North Olmsted	12	0	1	10	23	3	6	9	32
North Royalton	5	0	0	4	9	0	1	1	10
Olmsted Falls	4	0	1	2	7	0	1	1	8
Parma	55	0	2	14	71	1	16	17	88
Parma Heights	6	0	1	0	7	0	2	2	9
Pepper Pike	0	0	1	0	1	0	0	0	1
Richmond Heights	4	0	0	1	5	1	0	1	6
Rocky River	13	0	0	6	19	0	4	4	23
Seven Hills	5	0	0	1	6	0	0	0	6

INJURY-RELATED FATALITIES BY LOCATION OF INJURY (continued)

TABLE 6B

Cities	Injury-Related Fatalities								
	Accidental					Violent			
	Accidents in the Home	Accidents While at Work	Vehicular Accidents	Accidents in Other Places	Total Accidents	Homicides	Suicides	Total Violence	Grand Total
Shaker Heights	9	0	0	2	11	2	2	4	15
Solon	6	0	0	0	6	1	4	5	11
South Euclid	11	0	0	2	13	0	0	0	13
Strongsville	21	0	3	17	41	1	7	8	49
University Heights	0	0	2	0	2	0	2	2	4
Warrensville Heights	4	0	3	3	10	4	1	5	15
Westlake	10	0	2	17	29	0	3	3	32
VILLAGES: Bentleyville	0	0	0	0	0	0	0	0	0
Bratenahl	0	0	0	0	0	0	0	0	0
Brooklyn Heights	0	0	0	0	0	0	1	1	1
Cuyahoga Heights	1	0	0	0	1	0	0	0	1
Gates Mills	0	0	0	0	0	0	0	0	0
Glenwillow	2	0	0	0	2	0	0	0	2
Highland Hills	0	0	0	0	0	0	1	1	1
Hunting Valley	0	0	0	0	0	0	0	0	0
Linndale	0	0	0	0	0	0	0	0	0
Mayfield Village	1	0	0	2	3	0	0	0	3
Moreland Hills	0	0	0	0	0	0	0	0	0
Newburgh Heights	1	0	0	0	1	0	0	0	1
North Randall	0	0	0	0	0	0	0	0	0
Oakwood Village	0	1	0	0	1	0	0	0	1
Orange Village	0	0	0	1	1	0	0	0	1
Walton Hills	1	0	1	1	3	0	1	1	4
Valley View	0	0	0	1	1	0	0	0	1
Woodmere	0	0	0	0	0	0	0	0	0
TOWNSHIPS: Chagrin Falls	2	0	0	3	5	0	1	1	6
Olmsted	7	0	0	3	10	0	2	2	12
Out of County	138	2	40	46	226	4	12	16	242
Unknown	1	0	3	101	105	1	0	1	106
Total	**902**	**10**	**152**	**401**	**1,465**	**233**	**203**	**436**	**1,901**

TABLE 7 INJURY-RELATED FATALITIES TRANSFERRED FROM OTHER COUNTIES*

County	Gender		Manner				Location of Death		Grand Total
	M	F	Accidents	Vehicular	Homicide	Suicide	Cleveland	Rest of County	
Ashtabula	4	1	0	2	0	3	5	0	5
Erie	1	0	1	0	0	0	1	0	1
Lake	1	2	2	0	1	0	3	0	3
Lorain	4	1	2	0	2	1	3	2	5
Medina	1	0	1	0	0	0	1	0	1
Stark	0	1	0	0	0	1	1	0	1
Summit	1	1	1	0	1	0	0	2	2
Total	**12**	**6**	**7**	**2**	**4**	**5**	**14**	**4**	**18**

*Autopsied Cases Only.

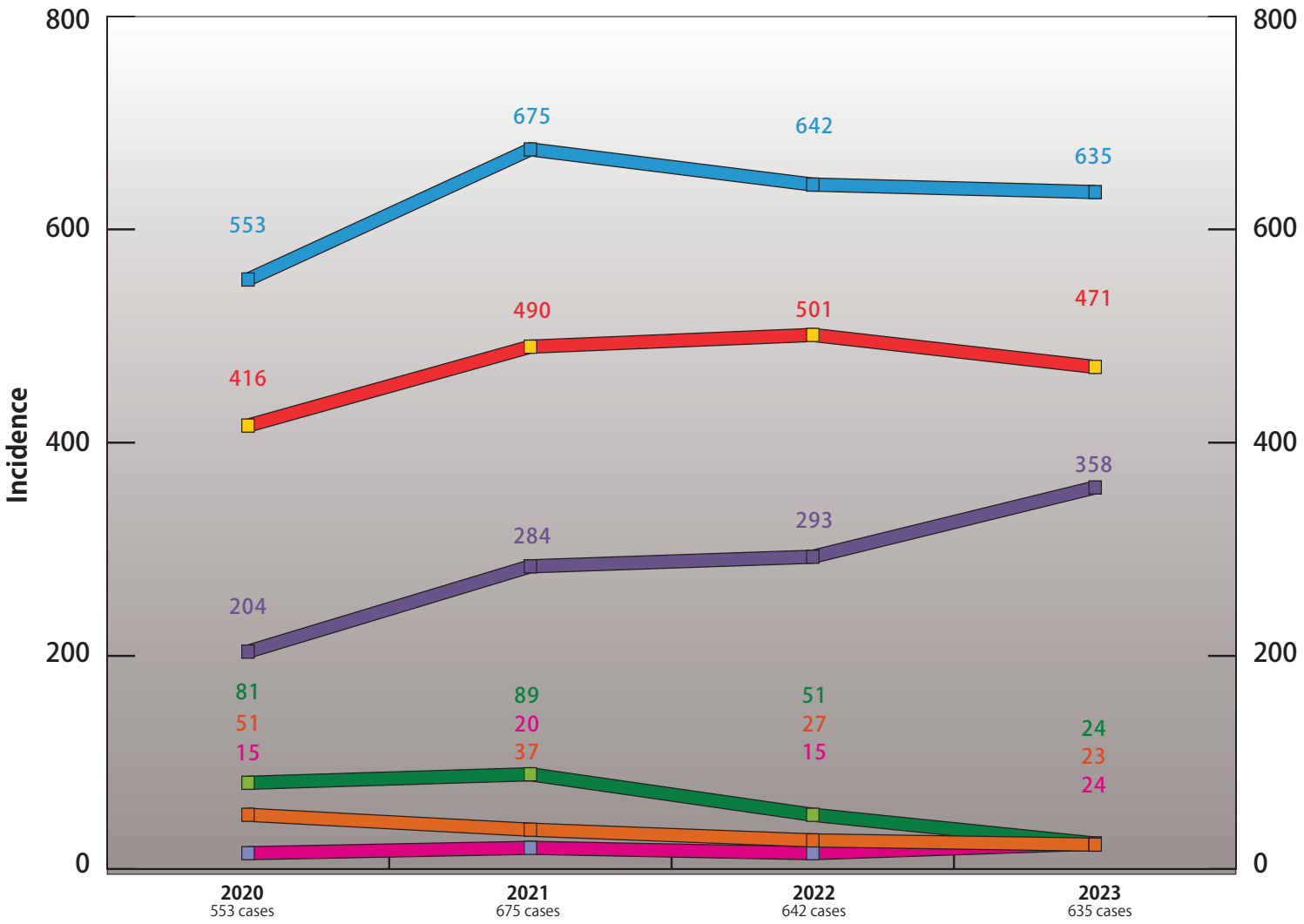
2023 AUTOPSIES PERFORMED FOR OTHER COUNTIES

TABLE 8

County	Male	Female	Grand Total
Ashtabula	24	5	29
Carroll	3	2	5
Columbiana*	16	6	22
Geauga	40	10	50
Harrison	5	0	5
Holmes	5	0	5
Jefferson	7	4	11
Lake	19	8	27
Lorain	2	1	3
Mahoning*	115	51	166
Medina	12	7	19
Portage	26	11	37
Stark	34	11	45
Trumbull	11	3	14
Tuscarawas	17	12	29
Wayne	3	3	6
Total	**339**	**134**	**473**

***Gender is unknown for 2 cases**

2020 - 2023 COMPARISON OF MOST COMMON OVERDOSE DRUGS

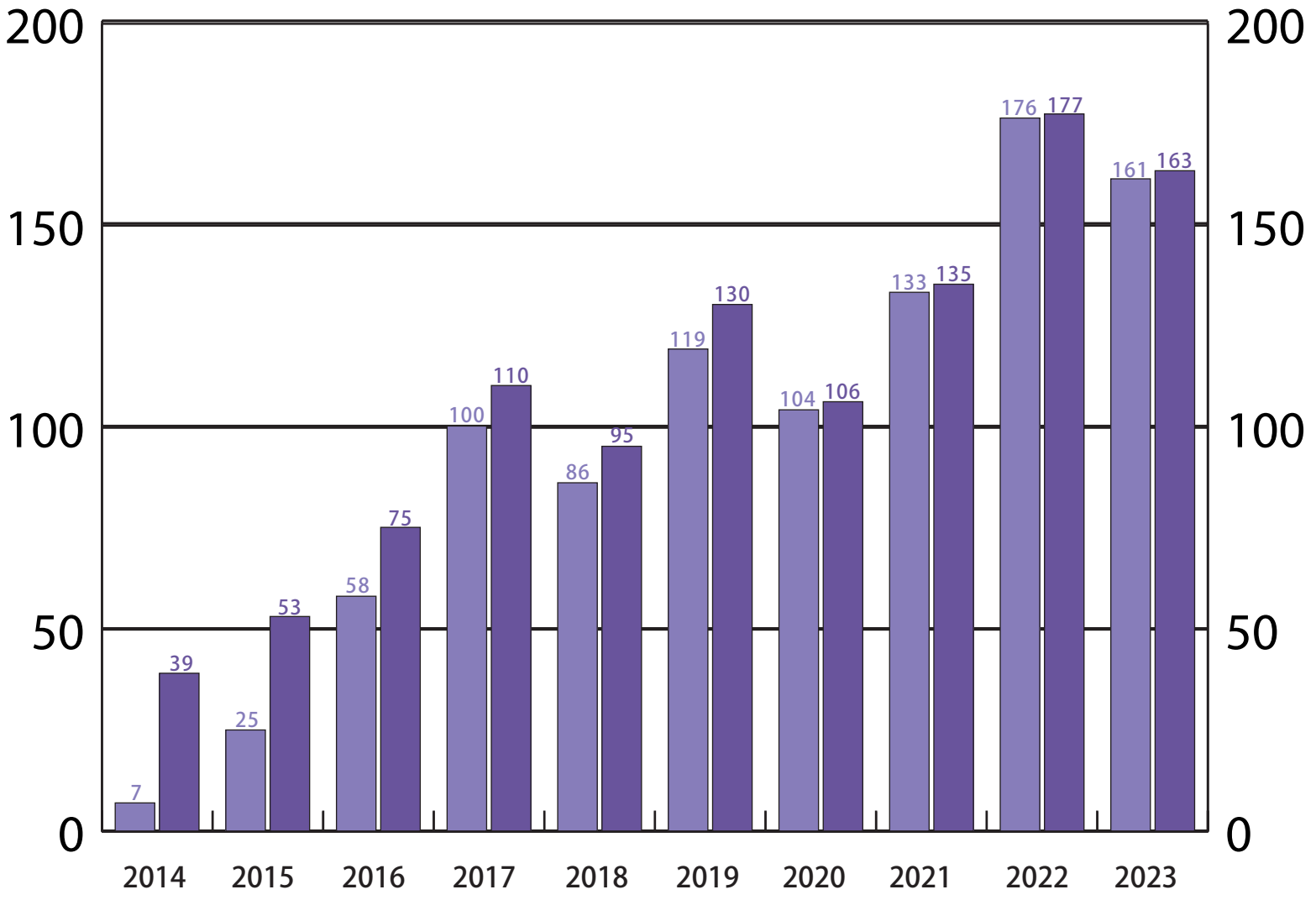


- **TOTAL DRUG OD DEATHS**
- **FENTANYL**
- **COCAINE**
- **ALL OPIOIDS** (not including Fentanyl)
- **HEROIN**
- **METHAMPHETAMINE**

Most overdose deaths contain more than one drug, so adding up the numbers of the above graph will not equal the total drug overdose deaths.

DID YOU KNOW?

2014 - 2023 COMPARISON OF AFRICAN AMERICAN FENTANYL DEATHS



The Cuyahoga County Medical Examiner's Office and Regional Forensic Science Laboratory is a unique working environment within county government and requires responsive and efficient administration to make it work properly. The highly scientific nature of the work provides a number of challenges. These are addressed by a hard working staff of dedicated professionals who prepare public and legal documents, procure supplies, address communications and technology issues, administrate fiscal and budgeting matters, human resource needs and building maintenance, security and cleanup.

Office of the Director of Operations

- Building Operations – Works with various vendors to maintain building, provide security and routine and specialized clean up needs.
- Community Relations & Training – Provides tours to interested medical and justice oriented students and professionals and training in death scene investigations for law enforcement and other justice oriented professionals.
- Epidemiology – Works with various public health agencies to interpret and disseminate trends from the Medical Examiner's Office.
- Fiscal & Budgeting Liaison – Work with assigned liaisons to develop biennial budget and monitor fiscal expenditures and revenues to assure adequate resources for the office and laboratory and maintaining responsible controls to protect taxpayer dollars.
- General Office / Records & Statistics – Works with Medical Secretaries and forensic pathologists to complete verdicts and with State of Ohio, funeral homes and Vital Statistics to complete death certificates. All records held on site and case statistics calculated and provided to public through reports. Several thousand public records requests are received and processed annually.

- Health & Wellness – Provides opportunities for on-site medical services, coordinates off-site medical needs, maintains fitness center.
- Human Resources Liaison – Work with assigned liaisons to provide safe working environment for employees as well address any other workplace needs.
- Procurement – Works with specialized vendors to provide equipment and supplies for the scientific labs and medical work stations, as well as day-to-day supplies for the offices.
- Public Information & Media Relations – Provides media and general public with timely responses to public records requests. Over 1,500 media requests are received and processed annually.
- Safety & Security – Runs building safety committee, engages outside partners and vendors to provide training and enhance security measures both inside the building and the entire facility campus.

Mission Statement

The Cuyahoga County Medical Examiner's Office is a public service agency responsible for the investigation of violent, suspicious and sudden and unexpected deaths and the provision of laboratory services. The agency is committed to the dignified and compassionate performance of these duties with impartiality and the highest professional levels of quality and timeliness in the service of the general public, medical and legal communities and the overall public health of the citizens of Cuyahoga County.

Goals

Goal 1: To complete fair and impartial death investigations in a manner consistent with the highest standards of excellence with increasing faster turn-around times for death certificates, autopsy reports and testing in the Regional Crime Laboratory.

Goal 2: Increase capacity of the Regional Crime Laboratory and add the most advanced scientific techniques and equipment to serve all Cuyahoga County justice and law enforcement agencies.

Goal 3: Become the most highly accredited Medical Examiner's office and public crime laboratory in the United States.

Goal 4: Provide the largest historical database of public health information in the United States for public research and scientific and epidemiological advancement.

Goal 5: Retain and recruit experienced, accredited and professionally licensed staff in all the various departments.

2023 Accomplishments

- Office and Labs continue to maintain full accreditations.
- Chief Medical Examiner Dr. Thomas Gilson named President, Ohio Coroner Association.
- Initiated a novel program through grant funding to aid coroners in Ohio in comprehensive death investigation (rolled out January 2024).
- Successfully recruited three staff forensic pathologists in spite of an overall national shortage.
- OD2A project to monitor the drug use trend for public health and safety purposes.
- Out of County autopsies performed exceed 400 for 7th year in a row.
- Sexual Assault kit testing on-going exceeding 5,000 cases submitted since start in May 2012.
- Over 1,000 persons trained by CCMEO both in-person and remote Death Investigation training courses.
- The Laboratory/CCMEO staff continue to contribute to professional committees (including those for new psychoactive substances, postmortem toxicology, and computational toxicology).
- The laboratories have been able to replace and/or upgrade specialized technical instrumentation for testing and bring latest technologies to provide better service to county residents, utilizing ARPA, Grants and Opioid settlement monies.
- The Toxicology laboratory continues to develop cutting edge methods for testing in postmortem and forensic investigations.
- Participated in the National Residency Matching Program (NRMP) inaugural forensic pathology fellowship match filling all positions. CCMEO is the oldest training program for forensic pathology in the country.
- Presented multiple research papers at national and regional meetings in areas of pathology, public health, toxicology.

The Cuyahoga County Medical Examiner's Office and our educational partner, Case Western Reserve University School of Medicine, are proud to host a Medicolegal Death Scene Investigation program which provides basic training for Medicolegal Death Investigators, Coroners, Medical Examiners, Detectives, Crime Scene Investigators, Emergency Medical Service providers, and Firefighters.

This unique 3-day course covers fundamental topics of forensic pathology; examination and documentation of death scenes, evidence recognition, preservation and collection; and decedent identification. Participants enhance their knowledge by investigating dynamic mock scenes. The mock scenes are interactive and require participants to role play.

After attending this course, participants are able to...

- Define types of death that must be reported to the Coroner or Medical Examiner in Ohio.
- Distinguish types of trauma and explain the mechanisms of injury.
- Understand basic concepts used to distinguish entrance from exit gunshot wounds and determine range of fire.
- Describe investigative information that is important to the determination of cause and manner of death in cases of asphyxia, drowning, environmental exposure, in-custody, sudden unexpected infant deaths, and intoxication.
- Recognize natural disease processes that present as violent or suspicious deaths.
- Distinguish early and late phase postmortem changes and identify variables used in the assessment of postmortem interval including limitations.
- List categories of decedent identification and describe methods and limitations.
- Recognize trace evidence that may be present on a body and apply procedures to preserve or collect evidence.
- Formulate a proper methodology for photographing a decedent and a death scene.
- Investigate a simulated death scene in accordance with national guidelines.

In 2023, 75 medical, law enforcement, and legal professionals attended training at the Cuyahoga County Medical Examiner's Office.

The Medical Examiner's Office's Public and Community Relations Officer currently offers several educational opportunities that include guided tours and student shadow programs.

Educational tours consist of an introductory lecture and a directed tour of the 200,000+ square foot facility that houses both the Cuyahoga County Medical Examiner's Office and the Cuyahoga County Regional Forensic Science Laboratory. Tours are offered throughout the year and are only available to eligible and approved educational programs.

The Cuyahoga County Medical Examiner's Student Shadow Program program consists of small classes of 12 participants for a day-long concentrated program. There are separate shadow experiences for high school or college-level students and the programs are only available to Juniors and Seniors.

In 2019, the office established The Cuyahoga County Medical Examiner's Office Citizens Academy, in an effort to educate residents on the functions and duties of the office/laboratory. This is the first Medical Examiner's/Coroner's Office Citizen Academy to be established nationwide.

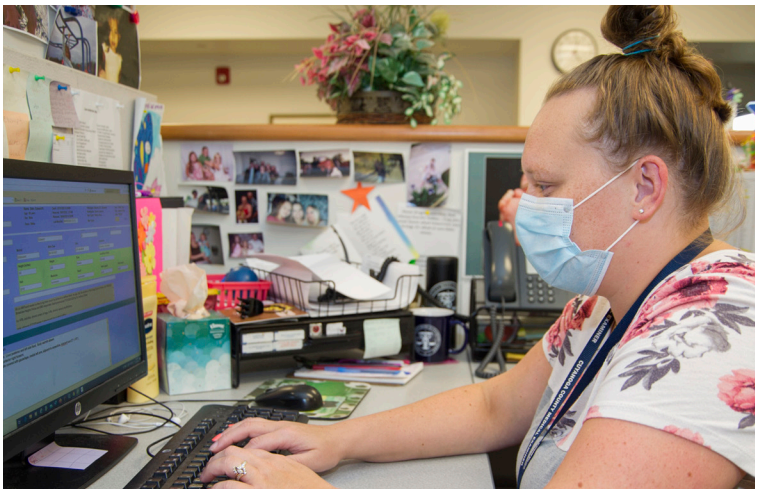
The 10-week academy is structured as a combination of lectures and hands-on activities. The academy is free to county residents, and 30 participants are selected for each academy.

In 2023, 37 guests participated in educational tours and training at the Cuyahoga County Medical Examiner's Office. Visitors were from the following organizations; Cuyahoga County Prosecutor's Office and Hawken High School.

General Office

The responsibilities of the General Office is to aid the Cuyahoga County Medical Examiner's Office (CCMEO), in obtaining and creating the needed records and documents to accurately complete any and all Medical Examiner's Office cases . This office will assist health and law enforcement organizations, decedent's family members, and the community in obtaining the information needed for closure, legal, educational, and statistical purposes in a respectful and professional manner.

The functions of the General Office are multi-faceted. There are 3 General Office Case Managers that obtain information from hospitals, nursing homes, and law enforcement organizations, needed by the forensic pathologists to accurately determine cause and manner of death. Case Managers also work with funeral directors and decedent's family members to accurately create and complete death certificates and the official Medical Examiner's Report, and to distribute these documents to the appropriate recipients.



The portion of the Medical Examiner's Report prepared by Case Managers is called the Medical Examiner's Verdict and is part of a group of public records that is obtained through this office. A public record request can include any combination of the Verdict, Autopsy Protocol, and Toxicology Report. Photographs and Microscopic slides can only be obtained by certain agencies and family members. **In 2023 the Medical Examiner's Office provided records for 4,457 requests.** That's more than 85 requests per week!

Case Managers also serve in an important reporting role. They routinely provide information to local Vital Statistics departments, Children and Family Services, the Board of Health, and many hospitals and law enforcement agencies.

Record Management and Statistics

When all initial orders are completed and sent, the cases are stored in a file room until they can be scanned to disc. After scanning, the hard copy cases are stored in the Medical Examiner's Office archives (in a separate building). The case records and reports are to be held or stored in a secure and confidential manner that allows ready access as needed, recognizing that most inquiries involve recent cases, but that even cases which are many years old need to be archived appropriately for retrieval.

Information from cases is retrieved and compiled into specific categories for statistical purposes. This information is provided to many professional agencies on a weekly, monthly, or yearly basis. The Records Management and Statistics Department also plays a large part in creating the Statistics book that you are currently reading.

Medical Secretaries

The Medical Secretaries work with the Pathologists to complete the Final Pathological Diagnosis and Report of Autopsy for both Cuyahoga County and several surrounding counties. Medical Secretaries, like Case Managers obtain information from agencies to assist the Pathologists in their determination of cause and manner of death. They also report deaths to the Ohio SIDS Network (deaths of children under 2 years of age), and to Children and Family Services or KIDS Network (children 17 years of age and under). The Medical Secretaries maintain schedules for the visiting medical students and resident doctor's rotations. The department answers telephone calls and takes messages for the Pathologists, prepares bills for out of county autopsies, does file management, and maintains departmental records and logs.

The Histology Laboratory at the Cuyahoga County Medical Examiner's Office is responsible for preparing and staining microscopic slides of smears and tissue samples taken from decedents at the time of autopsy. The Histology Technologist processes the tissue samples through formalin, alcohol, and paraffin wax in order to cut thin sections of tissue, place them on glass slides, and stain them with hematoxylin and eosin (H&E). The stained tissue on the slide is covered with mounting media and a glass coverslip. When the slide dries the tissue is essentially protected and preserved indefinitely.

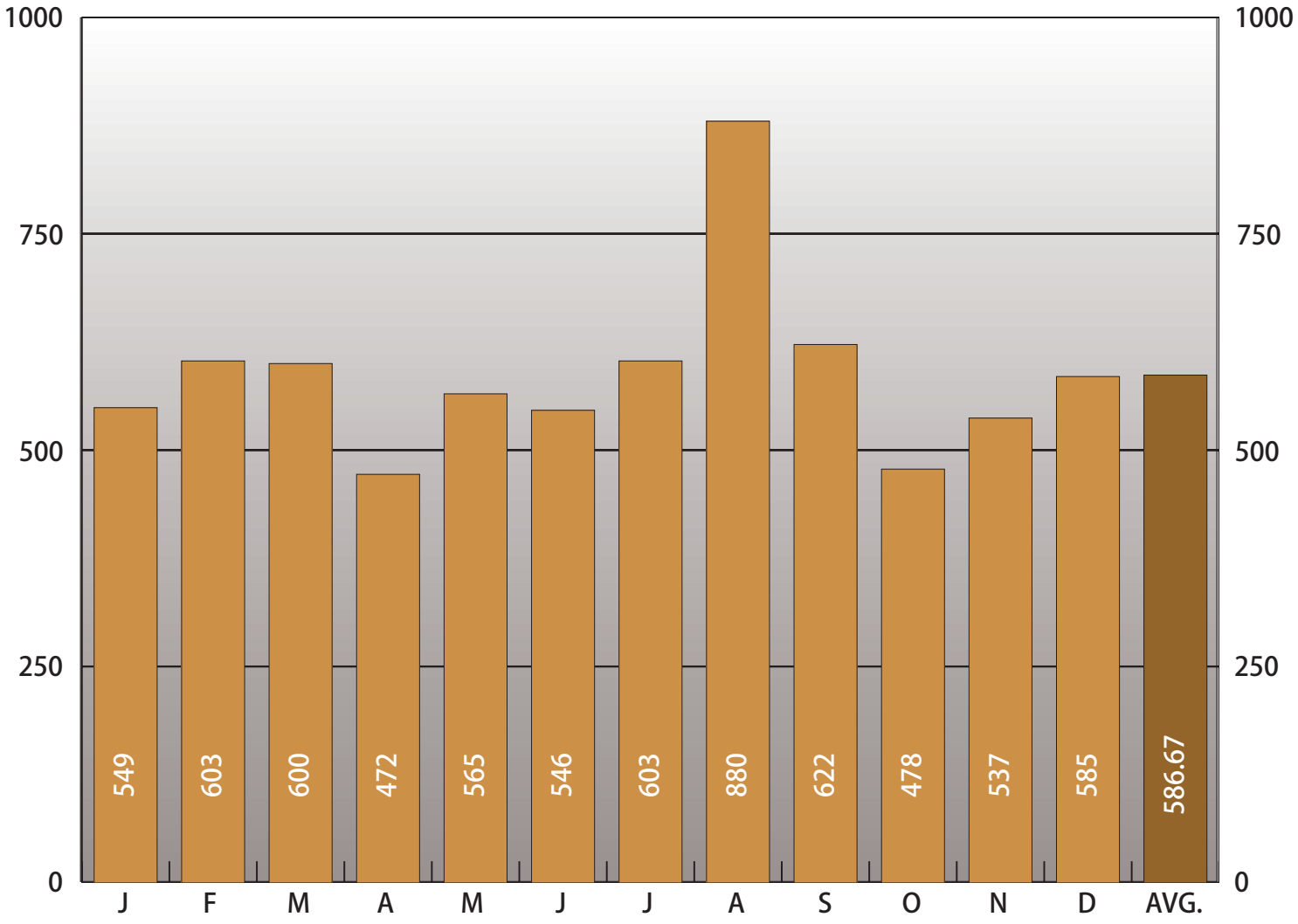
The slides produced are used primarily as a diagnostic tool by the Forensic Pathologist to aid in determining cause and manner of death. Generally, histologic slides are viewed in combination with all evidence collected to make a ruling. However, there are some diagnoses, such as myocarditis, made only by microscopic examination of tissue.

Approximately 10,000 to 16,000 slides are prepared annually in the lab. After each case is signed out by the Pathologist, all slides are returned to Histology. They are then filed and permanently kept in a secure location in our Archives.

Histology slides also serve as an investigative tool helping to solve cold cases when no other DNA evidence is available. Oral, vaginal and rectal (OVR) swabs are taken in cases of suspected homicide and sexual assault. Slides are made after the swabs are rubbed on glass slides and stained for the Pathologist to view. Rape, assault, and abuse are all areas in which OVR smears are a part of physical evidence that can help prove the guilt or innocence of a defendant. In certain cases, OVR slides can be used to establish paternity. Upon request the OVR smears taken at autopsy are transferred to the DNA department for further processing. The extracted DNA from the smears has resulted in DNA profiles which were later entered into CODIS. This work has led to DNA "hits" that contributed greatly to cold case investigation.

The Histology Laboratory also works with Civil, Prosecuting, and Defense Attorneys by supplying them with Legal Case Recuts from the original case blocks kept on file for 25 years. These slides are purchased by the lawyers and used by independent agencies to reexamine the evidence and give a second opinion regarding the case, mostly in civil suits.

TOTAL NUMBER OF SLIDES MADE BY MONTH FOR THE YEAR 2023

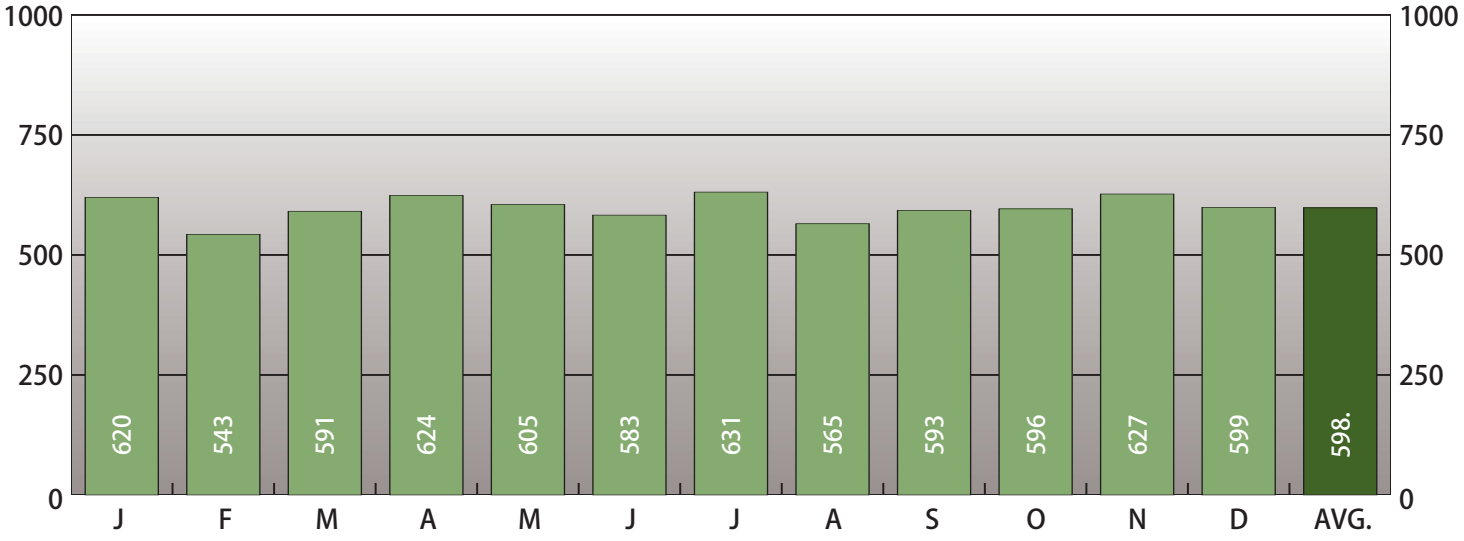


2023
TOTAL SLIDES
7,040

One of the primary responsibilities of the unit is to collect enough information from the initial death report to determine if the Cuyahoga County Medical Examiner's Office excepts jurisdiction or releases jurisdiction.

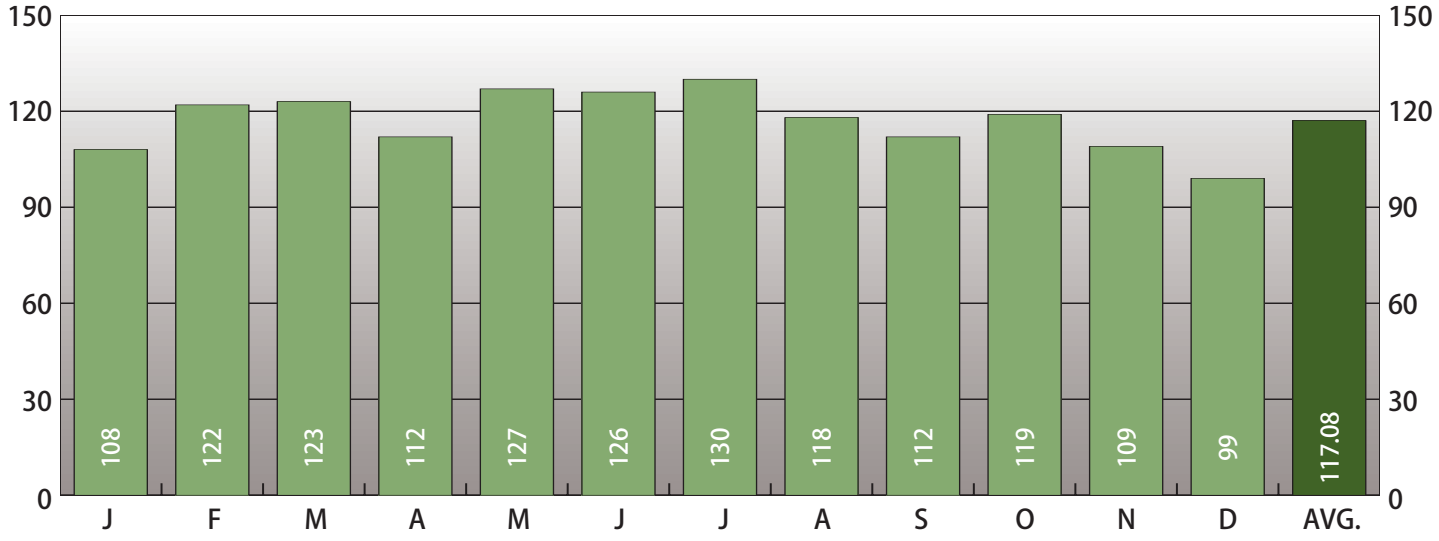
Once a death is determined to be a medical examiner's case, the investigations unit determines whether or not a scene visit is required. Once established Investigators gather data to help the pathologists formulate the cause and manner of death. Investigative information includes the Investigator's report, scene photographs, medical records, police records, trace evidence findings, consultant's findings, special test results, etc.

TOTAL NUMBER OF HANDLED CASES BY MONTH FOR THE YEAR 2023



2023
TOTAL CASES
7,177

TOTAL NUMBER OF SCENE INVESTIGATIONS BY MONTH FOR THE YEAR 2023



2023
TOTAL SCENES
1,405

The Department of Pathology is staffed by 8 full time physicians who are Board Certified Forensic Pathologists and physicians that are training in forensic pathology (fellows). All of the physicians are appointed as Deputy Medical Examiners and assist the Medical Examiner in his medical duties.

Pathology is a medical specialty that concerns the diagnosis of disease through examination of body tissue and fluids. There are two main branches of pathology – anatomic and clinical. Anatomic pathology involves examination of body tissues removed from the body. Surgical pathology and cytology are the two most familiar areas since they deal with biopsy or surgical specimens and/or cell examinations like the PAP smear. Clinical pathology evaluates body fluids. Areas of clinical pathology include chemistry, microbiology, hematology, and blood banking. Forensic pathology is a subspecialty of pathology that applies the techniques of anatomic and clinical pathology to legal issues.

The primary duty of the Deputy Medical Examiner is to perform autopsies to determine the cause and manner of death. Additional duties include testifying in court in both criminal and civil cases, teaching medical students, hospital pathology residents, and other groups, and occasional examination of death scenes.

Determination of cause and manner of death is an involved process that can take anywhere from a few days to months, depending on how complicated the case. Many bodies that come to the Medical Examiner's Office do not require an autopsy. These bodies are examined externally only. Those cases that meet certain criteria are autopsied the same or next day. The autopsy consists of three main components – gross examination of the body (looking at the body and organs with the naked eye), microscopic examination (examining tissue biopsies under the microscope), and toxicological examination (testing body fluids for prescription and over-the-counter medications as well as street drugs). To formulate the cause and manner of death, the pathologist will combine the findings of the autopsy with investigative information. Investigative information includes the Medical Examiner's Investigator report, scene photographs, medical records, police records, trace evidence findings, consultant's findings, special test results, etc. The manner of death consists of five categories – natural, accidental, suicide, homicide, and undetermined.

The Cuyahoga County Medical Examiner's Office's Deputy Medical Examiners work closely with families, police, prosecutors, defense attorneys, and other county Coroners to provide accurate death certification.

The utilization of radiologic investigation in the Cuyahoga County Medical Examiner's Office can be grouped under the following general broad headings:

- Foreign body identification and localization.
- Documentation of the type and extent of traumatic injuries.
- The identification of congenital anomalies affecting the skeleton.
- Demonstration of underlying diseases which may or may not be related to the cause of death.
- Investigative uses in conjunction with studying specific details.
- Identification of persons in mass catastrophes or a single unknown victim.

Foreign body identification and localization constitutes the major use of the X-ray equipment. The extent, number, and position of the bullets or radiopaque materials can be documented rapidly, with a great saving in time of examination and with high accuracy. If a bullet is not present, a search need not be conducted. Conversely, if a bullet is present, it must be recovered.

Radiographs give an accurate documentation of the fractures and traumatic effects of the soft tissue organs unobtainable in other ways.

Radiology plays an important role in establishing a record of either the normal or abnormal features of the part of the body in question. The use of X-rays to discern multiple pre-existing injuries of specific type and recognizable pattern in a child, living or dead is now well known in establishing "The Battered Child Syndrome."

In 2009 the victims from the Imperial Avenue tragedy all received thorough radiologic examinations. This procedure assisted with establishing the identities of the deceased. In instances where visual recognition is dubious or impossible, radiographs may provide identifying information. Studies of postmortem radiographs and comparable radiographs taken during life may serve to confirm or exclude a tentative identification.

Radiographs are utilized in the examination of soil samples as an aid to locate skeletal remains and other items of interest. Mattresses, box springs, charred material, various automobile parts and even a tennis shoe have been X-rayed to locate foreign bodies.

The Cuyahoga County Medical Examiner's Office converted from film radiographs to a Digital Computerized Radiograph (CR) system in July (2011). The quality of images and the versatility provided by the system has significantly enhanced the information provided to the Forensic Pathologists. The ability to enlarge an image to key in on a specific aspect of an examination or vary the contrast and brightness to identify skeletal deformities has been of great value.

In the event of a plane crash or other mass casualty event, the Digital Computerized Radiograph (CR) system in conjunction with the portable X-ray unit can be transported and set up promptly on site. This allows for the ability to perform and deliver quality radiographs from a remote location.

The immediate availability of diagnostic radiographic equipment in the Cuyahoga County Medical Examiner's Office offers the Forensic Pathologist an invaluable tool which aids in performing the autopsy, saving time, as well as accurately documenting pathologic changes.

3,187 radiographs were made in 2023 of inside cases.
1,080 radiographs were made in 2023 of outside cases.

723 inside cases required x-ray procedures in 2023.
232 outside cases were x-rayed in 2023.

The average number of images obtained per x-rayed case was 4.47.

48.61% of all autopsied cases required some form of radiologic procedure.

Approximately 406 of the cases requiring x-rays were a result of gun shot/shooting injury

Since the inception of the Photography Unit in 1951 (one of the oldest in the U.S.), the primary purpose of the department is to provide a credible, accurate, objective visual record of medical/legal evidence. Scenes of death or bodily injury, associated evidence, wounds, organ specimens and recognizable features of identification on a body are available for examination for only a short time. Therefore, all these subjects (a facial I.D. photo, autopsies, gross specimens, clothing, or trace evidence) are routinely documented by the photography staff. Afterwards, any image processing or printing is done in house. This is discreet, maintains the uninterrupted chain of possession of evidence, and facilitates the availability of image files, negatives, and prints. The Photography Unit also processes and archives images from other sources including Receiving, the Investigation Unit, hospitals, and law enforcement agencies.

Photography, as part of a case report, provides visual support to the written notes and observations of the pathologist during viewing or autopsy, the forensic scientist's examination of clothing or evidence, and the findings of other staff members. It is a teaching aid in lectures and a visual aid in court presentations and published research. It can also stand alone, conveying information that words cannot, and be an investigative tool in itself. Besides recording what can be seen with the human eye, photography surpasses that through a variety of special techniques, making the small large, the invisible visible, or otherwise enhancing all or some aspect of the subject. Infrared light can be isolated and photo-documented to reveal gunshot residue, while ultraviolet light assists in identifying marks on a decedent's skin. Transparent overlays of impressions reproduced in a 1:1 fashion illustrate patterns that can be matched to fabric, a tool, or a tire tread, and photomicrography shows pathology of disease or the presence of foreign matter on the finest scale.

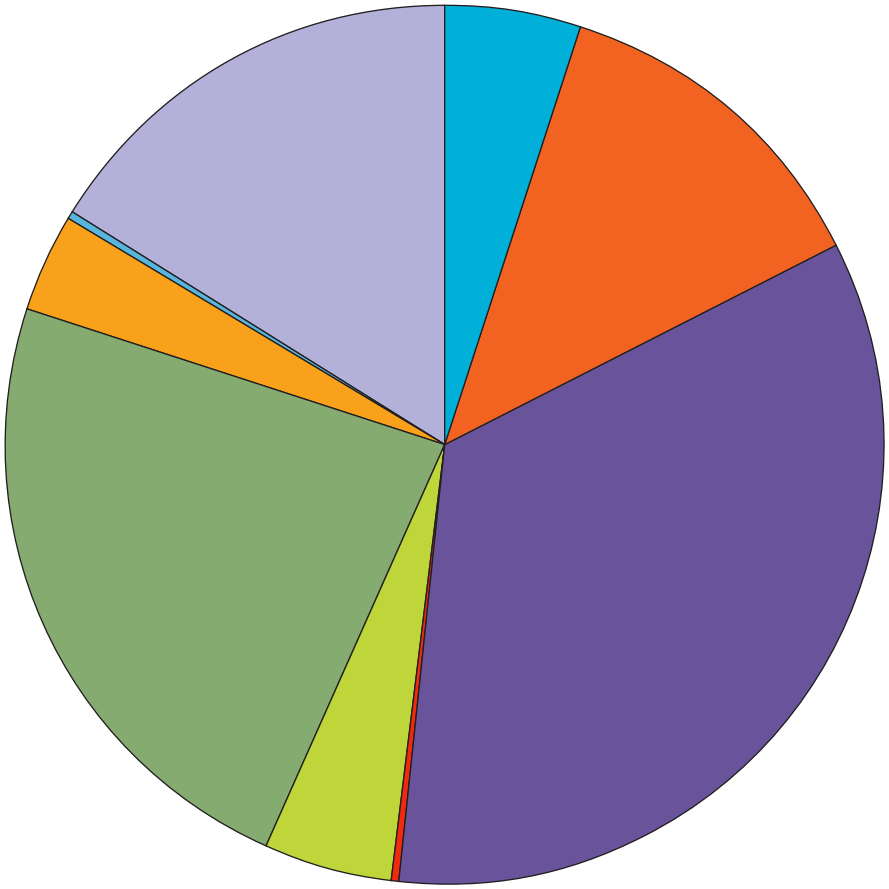
Since 1989, the Photography Unit has made use of computer hardware, software, and digital imaging technology to improve its investigative potential, resolve spatial relation questions encountered in crime and accident scenes, and complete graphic assignments more quickly and efficiently. In 2000 the Photography Unit successfully made the transition from film to digital technology. Presently all services previously performed with film are accomplished using digital equipment, with the highest priorities placed upon image security, image quality (resolution and color), and image file authentication and archiving. Mindful of the ever-increasing emphasis on quality assurance, the Photography Unit continues to advance standards and practices consistent with guidelines established by SWGIT and other respected authorities.

Historically, the Photography Unit at the Medical Examiner's Office has also had the responsibility and the resources to produce three-dimensional constructs and graphics (including this report). Charts, graphs, illustrations, crime scene reconstructions or other scale models are utilized in court, classrooms or publications as effective ways to make investigative, scientific, or technical points more accessible to jurors, students, or law enforcement personnel in a way that verbal description cannot.

As the demand for products and services offered by the Photography Unit increases, the dedicated staff continues to improve themselves with targeted training and instruction. Through sustained learning, forensic photographers are exposed to new skills, techniques, and emerging technologies. This emphasis on education will allow the Photography Unit to better serve the office's forensic pathologists and scientists, Northeast Ohio's law enforcement community, and the citizens of Cuyahoga County.

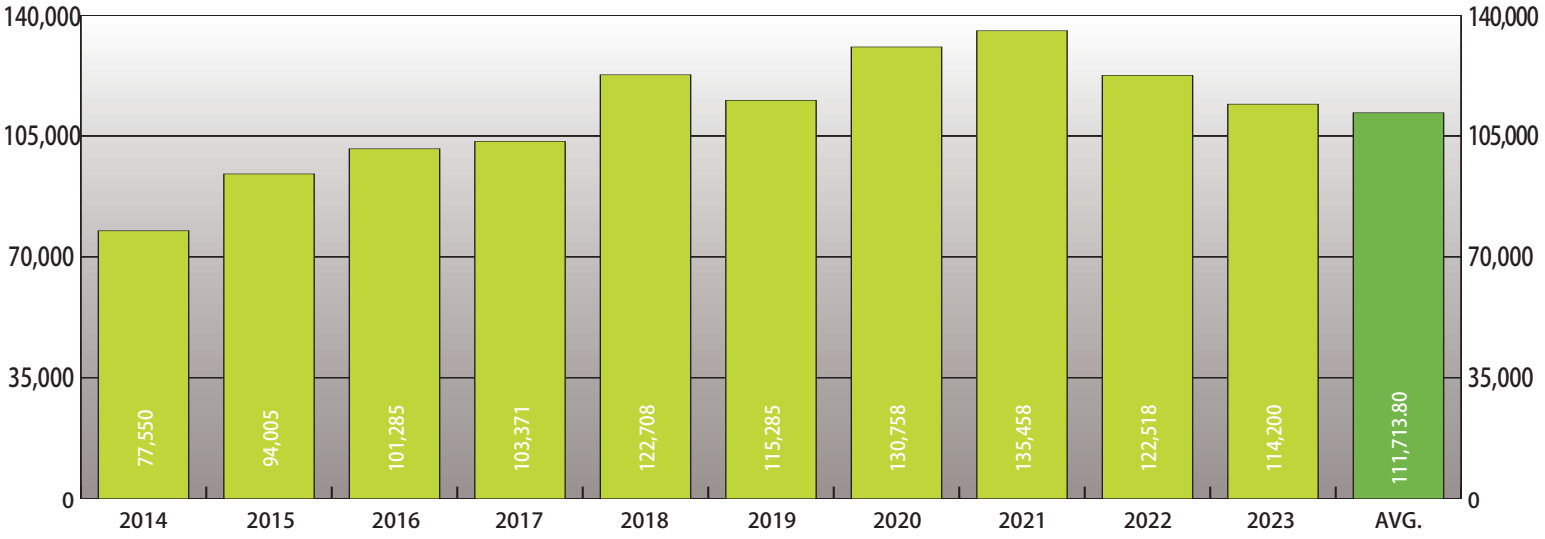
RECORDED IMAGES BY MANNER OF DEATH*

83,951 Digital Photographs

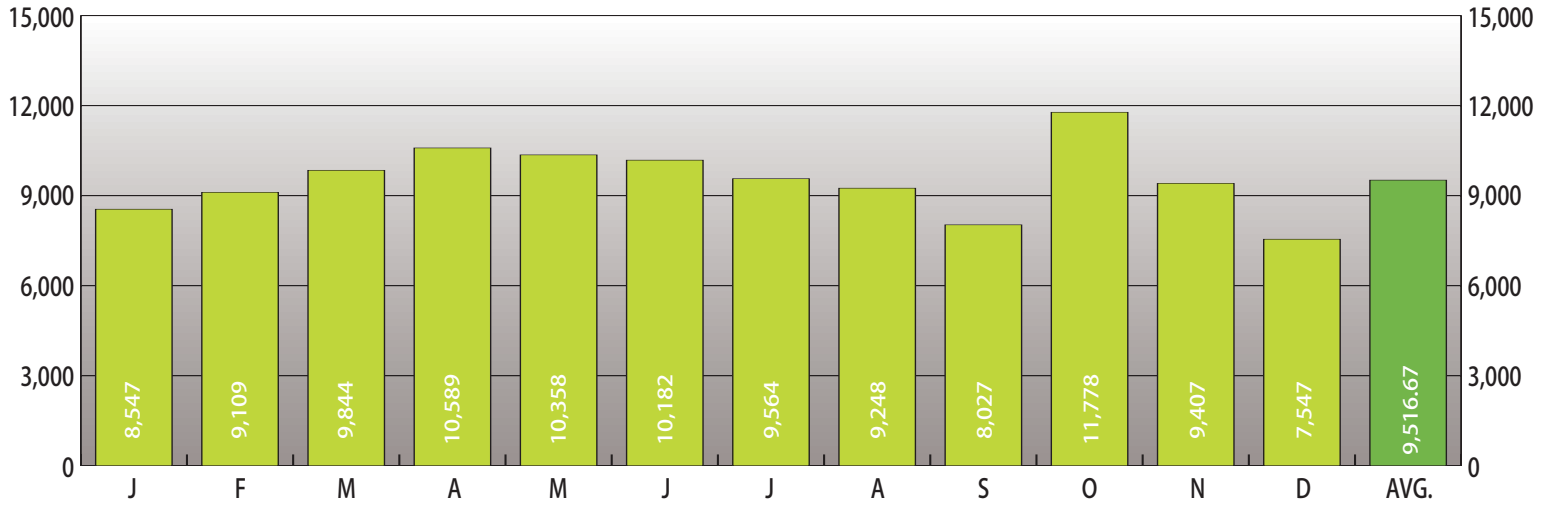


- HOMICIDES (28,681)
- NATURAL CAUSES (19,545)
- ACCIDENTS IN THE HOME (13,383)
- SUICIDES (10,498)
- VEHICULAR ACCIDENTS (4,324)
- ACCIDENTS IN OTHER PLACES (4,130)
- UNDETERMINED CAUSES (2,954)
- ACCIDENTS WHILE AT WORK (284)
- NO MANNER (152)

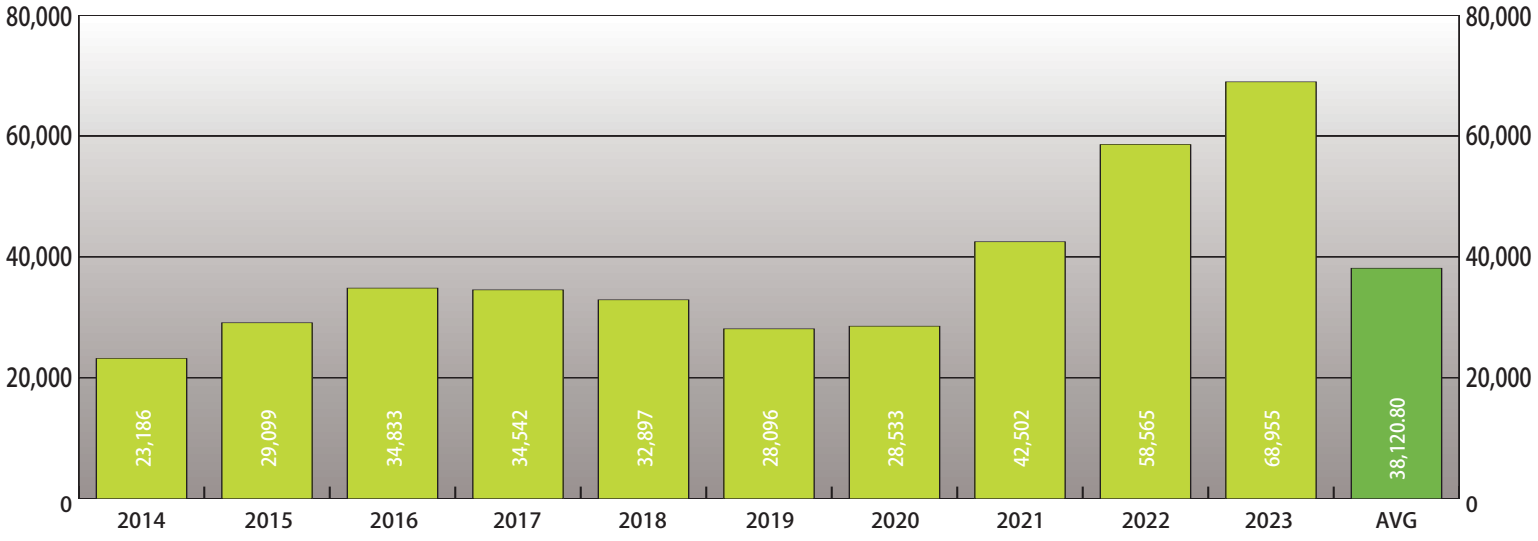
TOTAL NUMBER OF RECORDED IMAGES FOR A PERIOD OF TEN YEARS



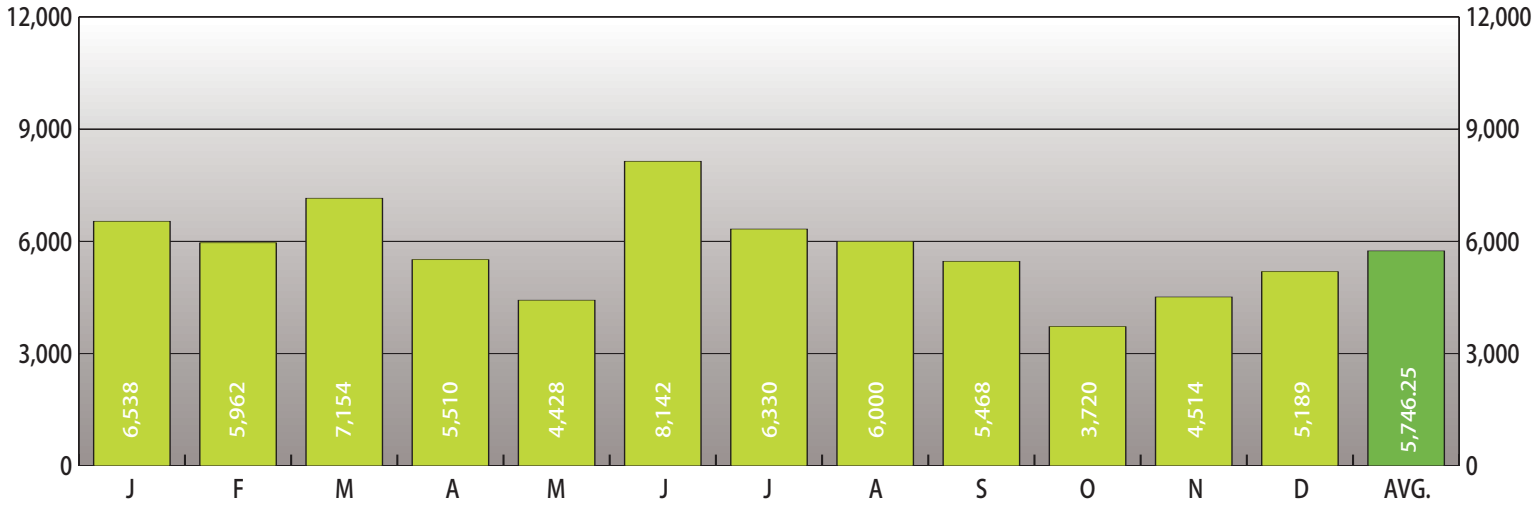
TOTAL NUMBER OF RECORDED IMAGES BY MONTH FOR THE YEAR 2023



TOTAL NUMBER OF RELEASED IMAGES FOR A PERIOD OF TEN YEARS



TOTAL NUMBER OF RELEASED IMAGES BY MONTH FOR THE YEAR 2023



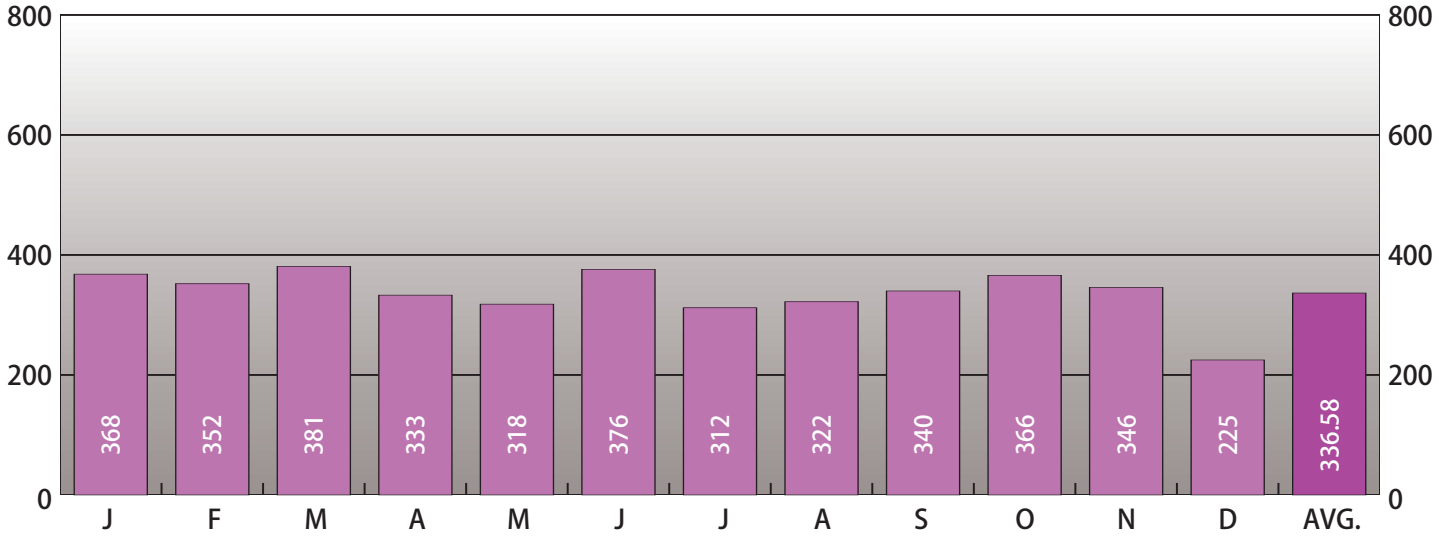
The Drug Chemistry Section started in 2008 as plans for a regional crime lab began to take shape. The Coroner's Drug Chemistry Section became more of a reality when an agreement was reached with the Cuyahoga County Sheriff for the Coroner's office to be the sole provider of controlled substance testing for that agency. Late in 2009 this service was finally made available. The section has expanded greatly with the formation of agreements with CMHA and the City of Cleveland to provide this service in exchange for personnel to help perform regional testing, as well as a dozen or so other agencies on an annual contract or on a fee-per-case basis. Since that time, the Cuyahoga County Regional Forensic Science Laboratory has been created and all agencies within Cuyahoga County can submit drug evidence to the lab free of charge. We also provide services to multiple federal agencies.

The Drug Chemistry Section has streamlined its reporting process by producing and delivering all reports electronically. Doing so has allowed the new Cuyahoga County Regional Forensic Science Laboratory to deliver controlled substance testing results much more quickly and efficiently than was being done previously. By combining this with very low turnaround times, the Drug Chemistry Section is providing controlled substance results faster than any other lab in the state and well below the national average. The accepted industry standard for the time needed to complete a drug chemistry case is 14 days while some labs consider 30 days to be satisfactory performance. Cases older than 30 days are considered to be backlogged cases.

Our Drug Chemistry Section averaged 34 days to complete a case in 2023. All of this has benefited the citizens of Cuyahoga County by reducing the cost of housing inmates in the county jail while they await arraignment on drug related offenses.

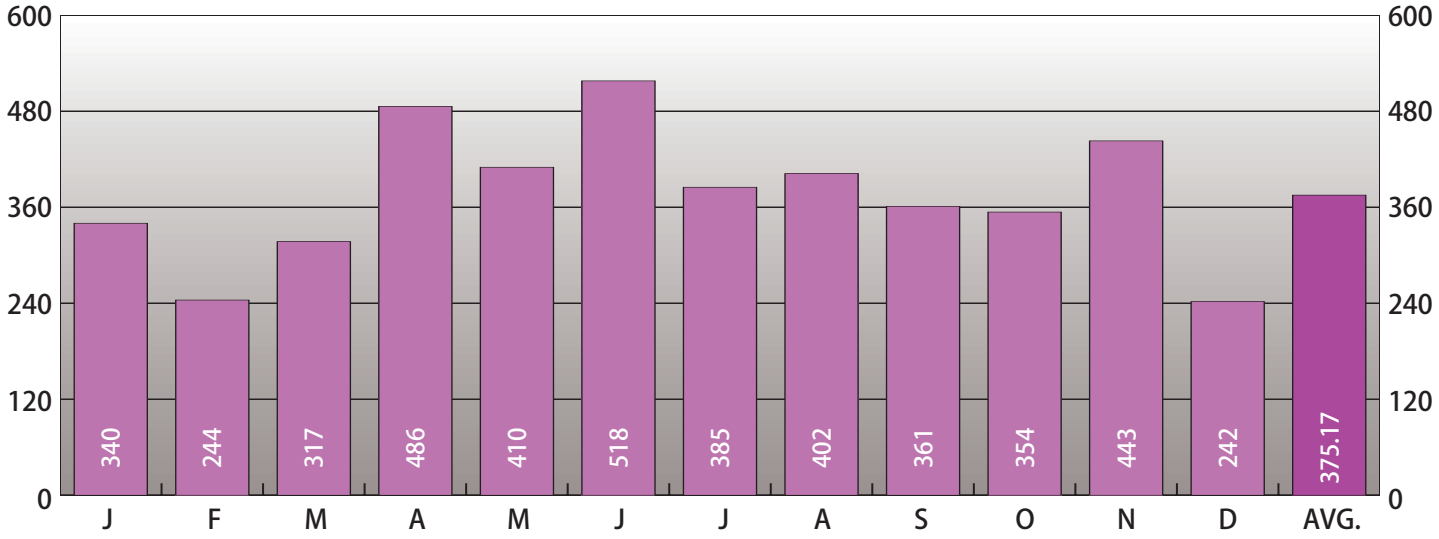
The Drug Chemistry Section provides controlled substance testing to law enforcement. It is the purpose of this section to weigh and identify any controlled substance that might be present in suspected drug evidence. It is also important for this section to be able to determine if a sample does not contain a controlled substance to prevent erroneous prosecution. The section can test for all controlled substances except for the quantitation of marijuana. Most samples submitted routinely contain mixtures of compounds. Previously a sample would contain only one drug. Now it is very common for a sample to contain 3 to 6 different drugs. The future will undoubtably show changes in the drug market, similar to the changes we have seen over the last 10 years, and the Drug Chemistry Section will be ready for it.

CASES SUBMITTED BY MONTH FOR THE YEAR 2023



2023
TOTAL CASES
4,039

CASES COMPLETED BY MONTH FOR THE YEAR 2023



Forensic Scientists within the Fingerprint Laboratory will develop and recover latent prints from items of evidence, analyze any latent impressions that are detected, and may compare these impressions with the known prints of individuals or may search them through the automated database.

An additional service provided by the Fingerprint Lab is the identification of deceased individuals. Fingerprints may be recorded from deceased individuals which can be compared to known exemplars of individuals in order to identify the decedent.

Development techniques routinely utilized by the Fingerprint Lab
include:

Visual Examination
Alternated Light Source Examinations (used to visualize fluorescent techniques or inherent luminescence)

Cyanoacrylate Fuming (superglue fuming which adheres to moisture in latent print residue on non-porous surfaces)

Cyanoacrylate Dye Stains (fluorescent dye stain used after cyanoacrylate fuming)

Powders (adheres oils, moisture and contaminants in latent print residue)

Ninhydrin (reacts with amino acids present in sweat, used on porous surfaces)

DFO (reacts with amino acids present in sweat producing a fluorescent reaction, used on porous surfaces)

1,2-Indanedione(reacts with amino acids present in sweat producing a fluorescent reaction, used on porous surfaces)

Physical Developer (reacts with non-soluble components of latent print residue, can be used to process porous items exposed to moisture)

Amido Black (protein enhancer for blood prints)

Small Particle Reagents (powder suspension that can be used to process non-porous items exposed to moisture)

Adhesive Processing Techniques (powder suspensions such as wetpowder and dial soap formulations that can be used to develop latent prints on adhesive surfaces)

Latent print examinations are conducted utilizing the ACE-V methodology. This is a sequential process which consists of four phases; Analysis, Comparison, Evaluation and when appropriate, Verification.

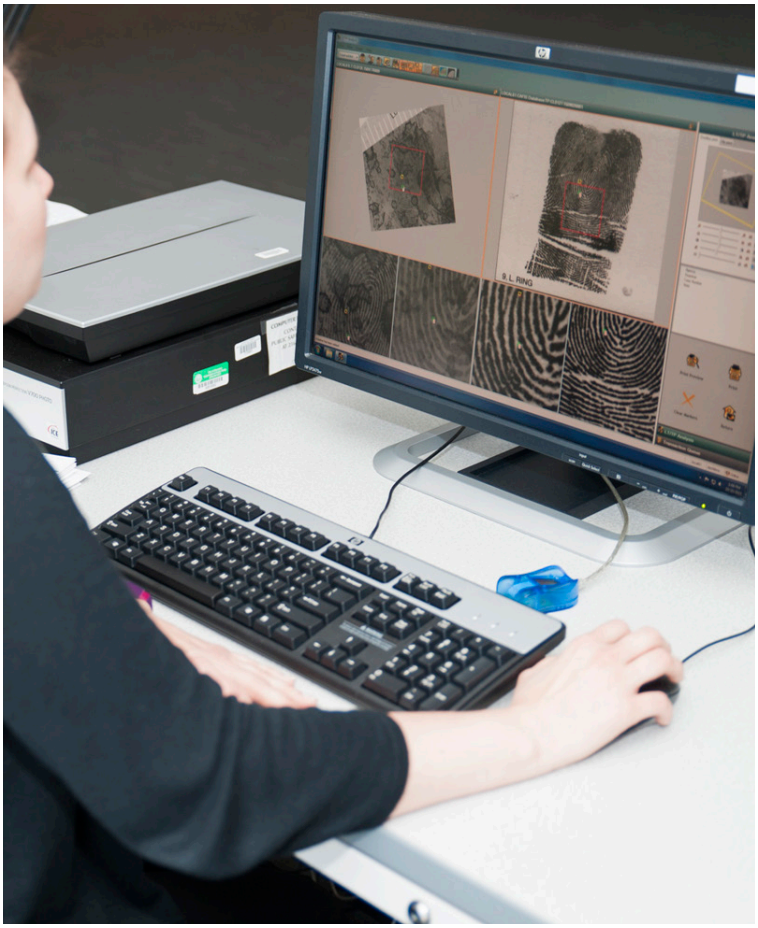
Analysis—the assessment of an impression to determine suitability for comparison

Comparison—the observation of two or more impressions to determine the existence of discrepancies, dissimilarities or similarities

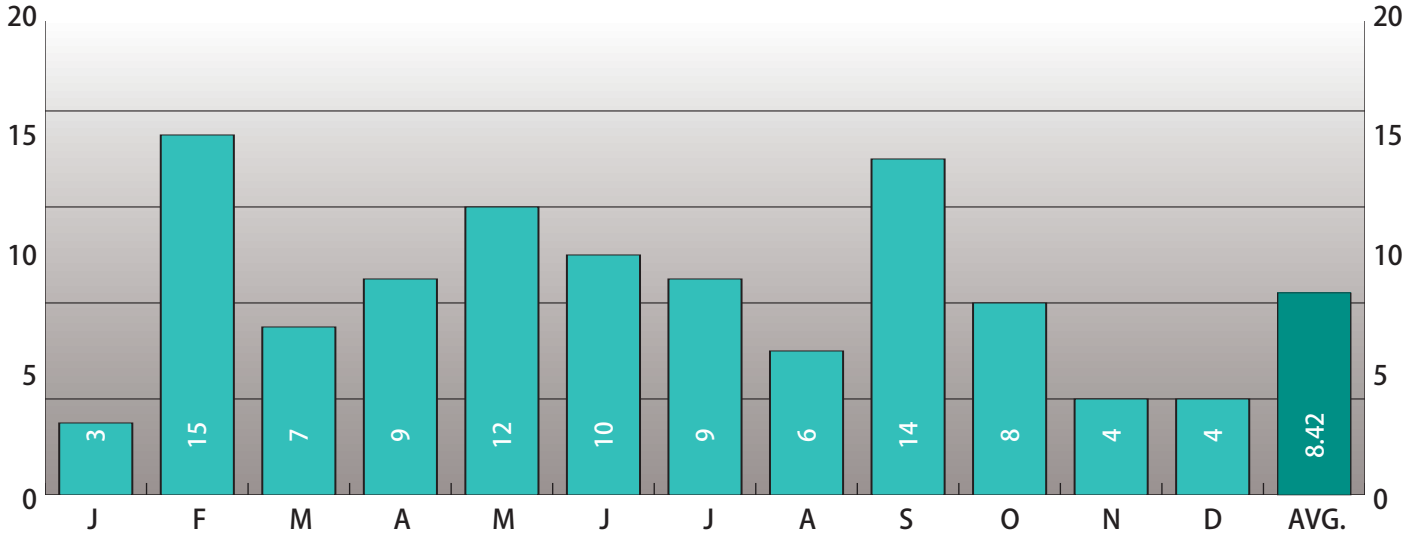
Evaluation—decision making step in which an examiner reaches a conclusion based upon the information observed in Analysis and Comparison

Verification—a second latent print examiner will conduct an independent ACE examination of the latent print to either support or refute the conclusion of the first examiner.

893 decedents were fingerprinted in 2023.
237 tentative/unknown decedents were fingerprinted in 2023.
193 tentative/unknown decedents were identified by fingerprints in 2023.

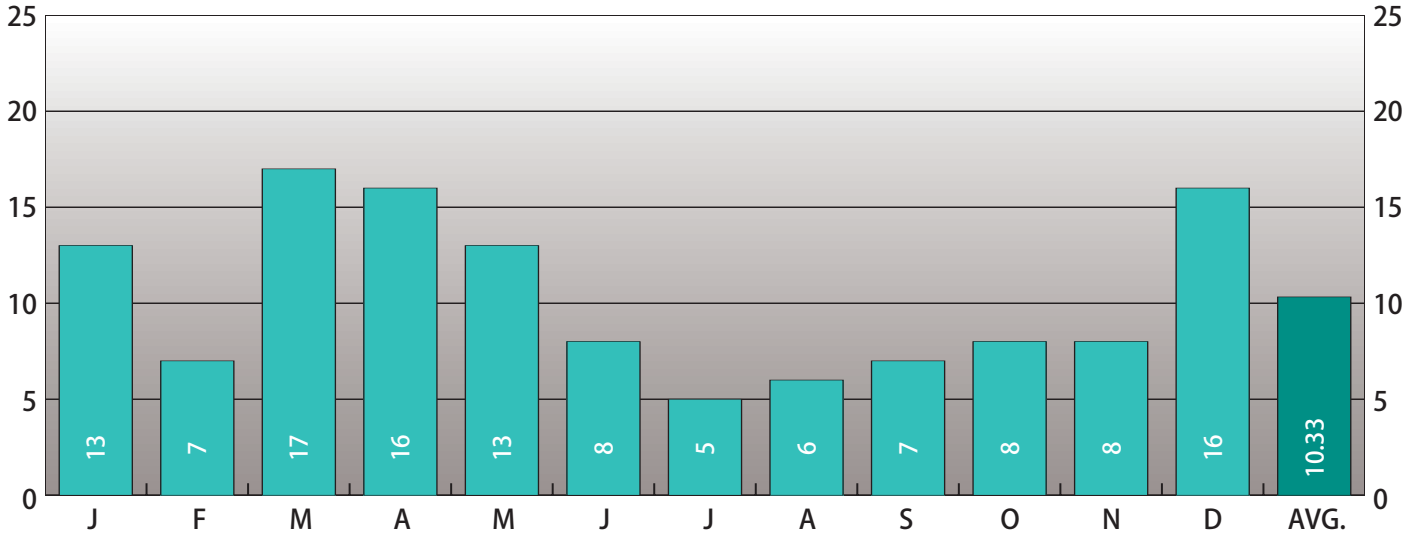


CASES SUBMITTED BY MONTH FOR THE YEAR 2023

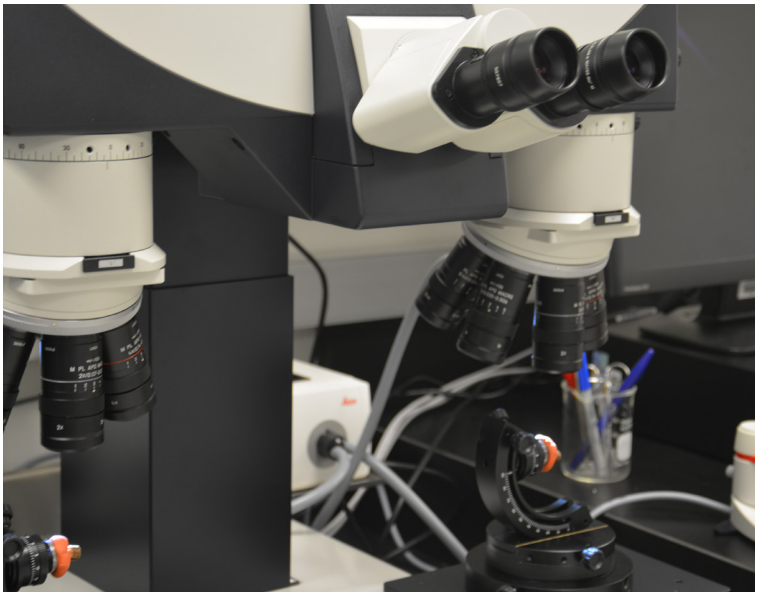


2023
TOTAL CASES
101

CASES COMPLETED BY MONTH FOR THE YEAR 2023

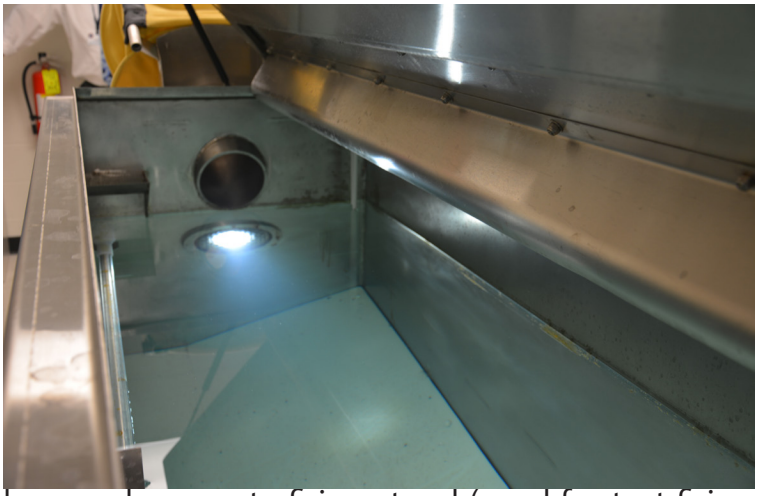


In 2017, the Firearms & Toolmarks Unit began to accept casework in two phases. Phase I transitioned casework from the Cleveland Police Department, where the laboratory was previously housed, to the new unit. Phase II expanded evidence submissions to local law enforcement agencies throughout Cuyahoga County. Our staff is comprised of veteran firearms experts who specialize in forensic science disciplines, such as firearms identification.



Forensic Firearms Identification deals primarily with the examination and comparison of fired ammunition components with known firearms. Evidence collected from crime scenes is examined and microscopically compared with test samples collected from test fired firearms in the laboratory. This process determines whether a particular firearm was used in an incident. It can also determine how many different firearms were used in an incident. Firearms examiners use a comparison microscope to analyze the unique striations, or markings, left behind on fired bullets and fired cartridge cases.

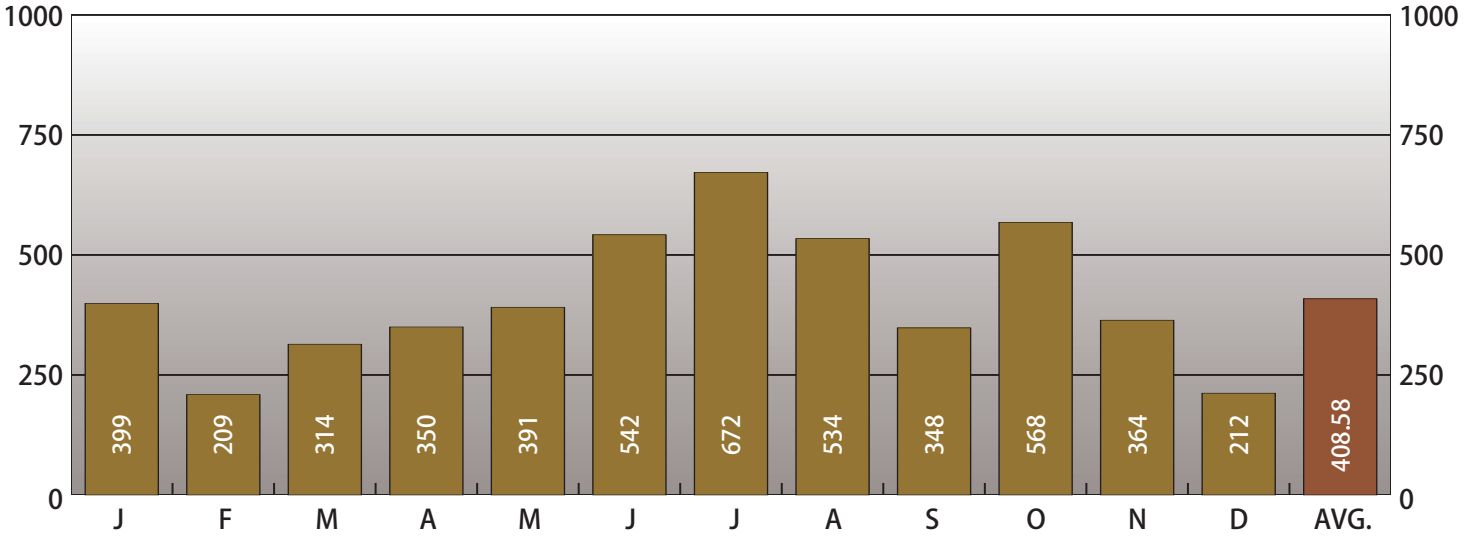
In addition to comparative examinations, the Firearms & Toolmarks Unit performs functionality determinations on firearms submitted in violent crime cases. The laboratory utilizes an indoor firing range which contains a water tank, cotton box, and a remote firing stand (used for test firing damaged or unsafe weapons). Known standards are collected from submitted firearms and can be later compared to fired bullets and fired cartridge cases collected at crime scenes.



Occasionally, firearms are submitted with obliterated serial numbers. The Firearms unit performs serial number restorations using a series of acids. This can lead to the possible discovery that a firearm was stolen or trace the firearm back to its owner.

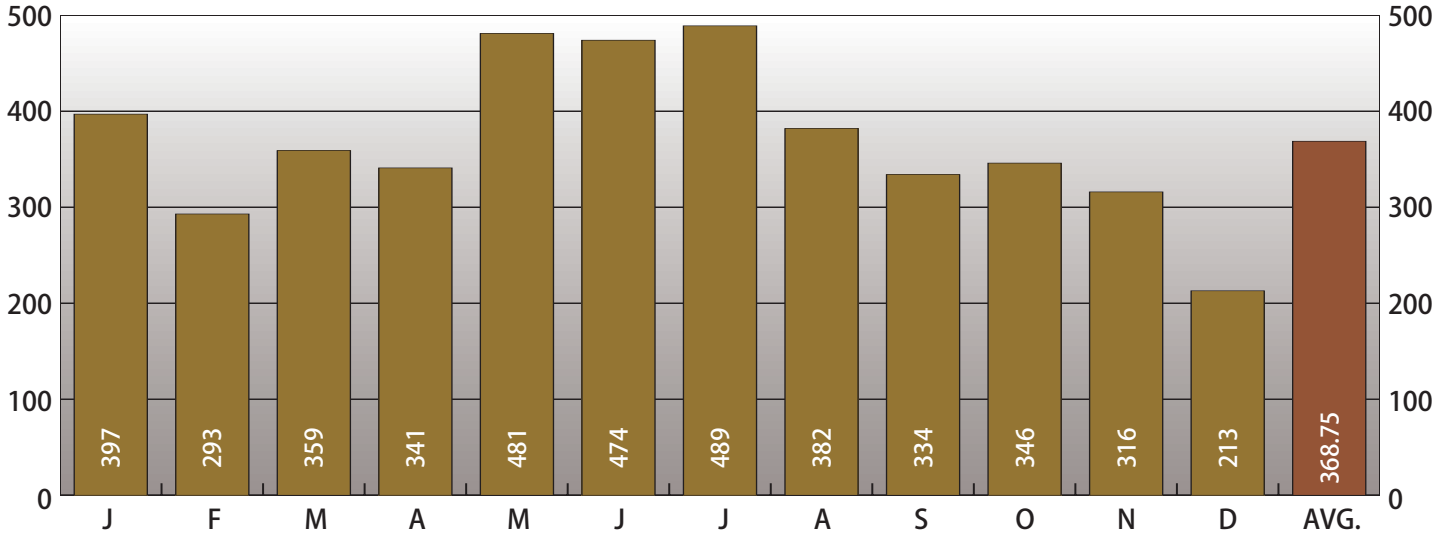
Furthermore, the firearms unit is partnered with the Bureau of Alcohol, Tobacco, and Firearms (ATF) in the usage of the National Integrated Ballistic Information Network (NIBIN). Specialized equipment known as the Integrated Ballistics Identification System (IBIS) is used to digitally capture images of fired cartridge cases which are then uploaded into the NIBIN database. NIBIN then performs a computer-based comparison of the image against previously entered cartridge cases in the database. The primary goal of the program is to link fired crime scene cartridge cases back to a firearm and to link previously unassociated cases.

NUMBER OF NIBIN LEADS BY MONTH FOR THE YEAR 2023



2023
TOTAL LEADS
4,903

CASES COMPLETED (NIBIN ENTRIES) BY MONTH FOR THE YEAR 2023



The Forensic DNA Unit helps to determine the possible identity, cause and circumstances in a criminal case through DNA analysis on the biological evidence in the case. DNA, or deoxyribonucleic acid, is a large molecule located within cells that contains the genetic instructions or blueprints needed to construct other components of cells and are used in the development and functioning of life forms. DNA analysis is a powerful tool because each person's DNA is unique (with the exception of identical twins).

The DNA unit maintains compliance with the FBI Quality Assurance Standards for Forensic DNA Testing Laboratories along with the Regional Forensic Science Lab overall ANSI National Accreditation Board. These accreditations verify the reliability of various aspects of the testing including laboratory equipment, the qualifications of our laboratory staff, and the soundness of our testing methods and standard operating procedures.

The Forensic DNA Unit consists of two components: Casework and CODIS.

The Casework element involves performing scientific analysis of biological samples recovered from crime scenes. DNA collection and analysis give the criminal justice field a powerful tool for convicting the guilty and exonerating the innocent.

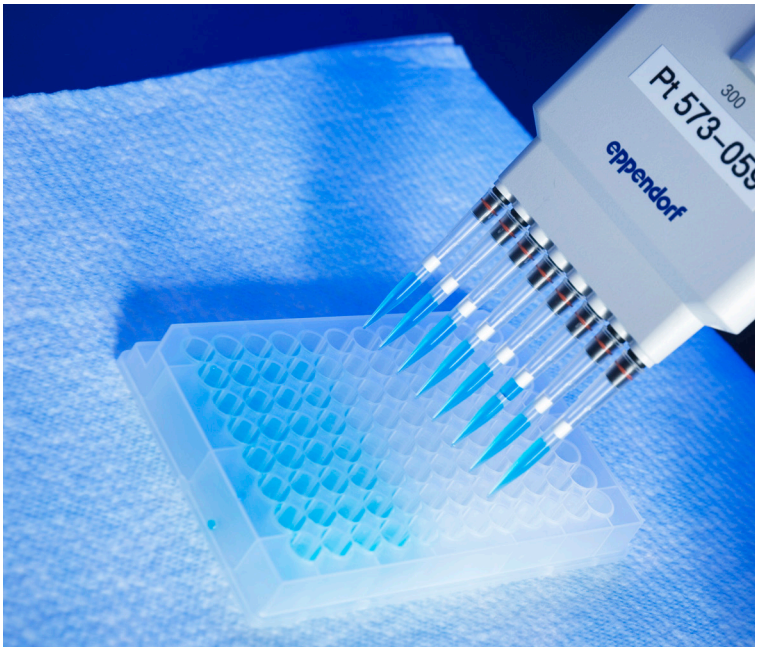
The unit assists law enforcement in resolving homicide cases through identification of any foreign DNA on the victim and through identification of DNA on the evidence collected from the crime scene and potential suspects. The unit also performs DNA analysis on biological evidence collected in sexual assault cases. In addition, the unit also performs DNA analysis on numerous evidentiary items such as guns, trigger, spent shell casings, knives, door knobs/handles, steering wheels, drug pouches and plastic baggies, which can successfully link the perpetrator to the item to help the law enforcement agencies in solving various other crimes.

"Touch DNA" refers to the DNA that is left behind from skin cells when a person touches or comes into contact with an item. By using Touch DNA techniques, the Forensic DNA Unit can work on the evidence from breaking and entering cases and examine guns and other weapons for possible DNA.

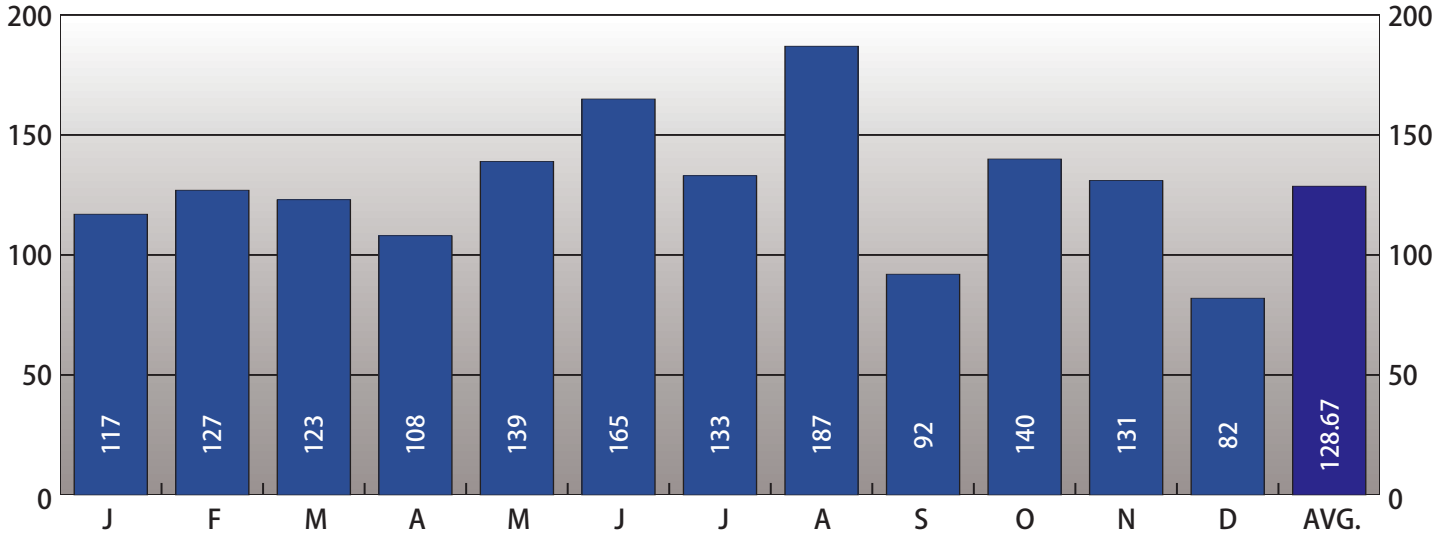
The Forensic DNA Unit also performs DNA analysis in "Cold Cases" using the latest DNA technologies. The unit uses TrueAllele Technology, a probabilistic genotyping computer interpretation and database system to interpret DNA mixtures using statistical modeling and comparing across various cases.

The CODIS component makes use of the Combined DNA Index System, which blends computer and DNA technologies into an effective tool for fighting violent crime. CODIS can generate investigative leads through different database searches, in crimes where biological evidence is recovered from the crime scene. It enables federal, state, and local forensic laboratories to exchange and compare DNA profiles electronically, thereby linking serial violent crimes to each other and to known offenders.

890 profiles entered into CODIS in 2023.
414 matches/hits received from CODIS in 2023.

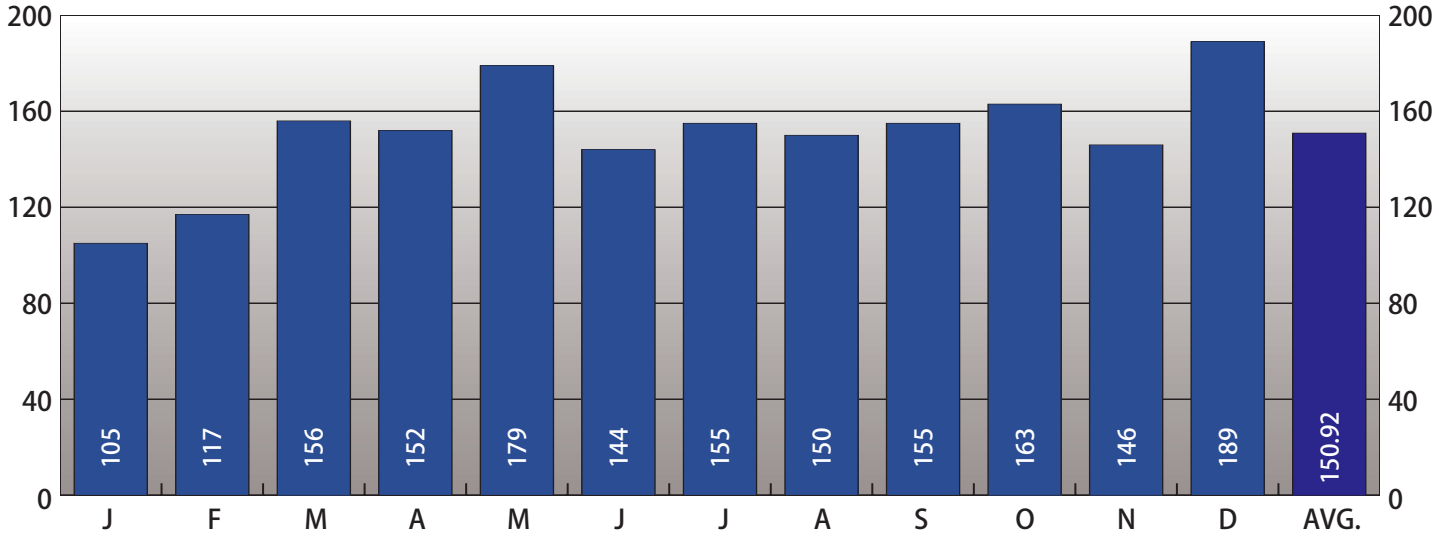


CASES SUBMITTED BY MONTH FOR THE YEAR 2023

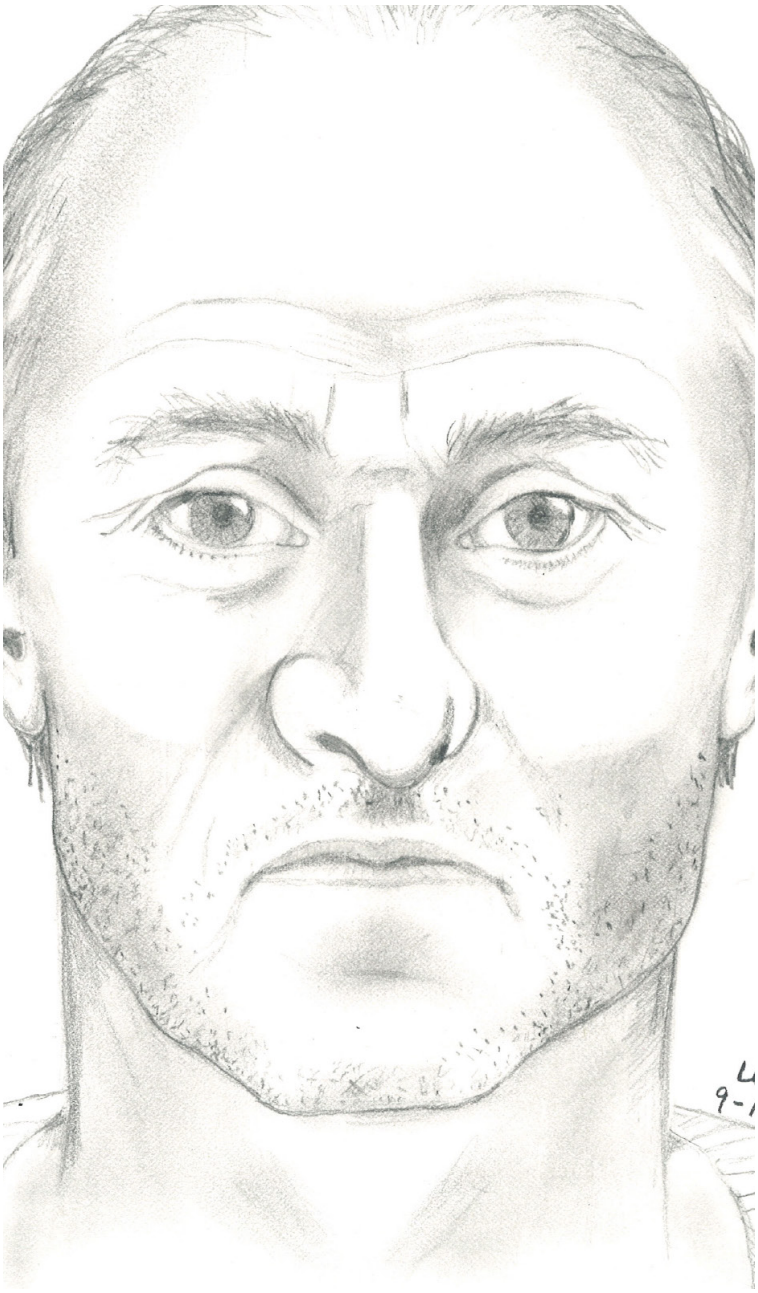


2023
TOTAL CASES
1,544

CASES COMPLETED BY MONTH FOR THE YEAR 2023



The Parentage & ID unit is accredited by AABB (American Association of Blood Banks). The Unit performs DNA relationship testing to identify decedents or human remains which cannot be visually identified due to decomposition, burning and/or mutilation. Efficient identification of such decedents/remains is required so that they can be released to the relatives, a correct death certificate may be issued, and law enforcement investigations may proceed.



Relationship DNA analysis is also used in resolving missing person cases. The unit also provides DNA relationship analysis in criminal paternity cases where it is believed that a woman has become pregnant as a result of a sexual assault. In such cases DNA paternity analysis can be carried out to establish the identity of the father of the baby, or in other situations such as rape or incest where there are products of conception. The unit also provides DNA relationship testing in child support, divorce, custody issues and immigration cases etc.

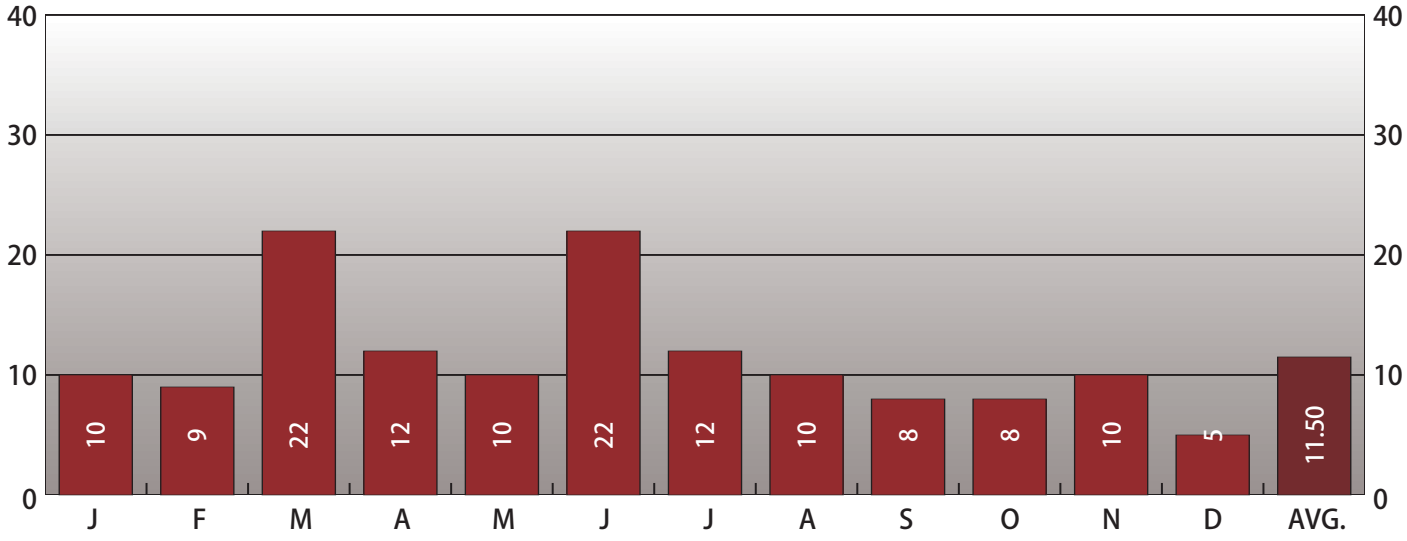
The Parentage & ID unit offers following types of DNA tests:

- Paternity test
- Maternity test
- Sibship test
- Grandparents test
- Twin Zygosity
- DNA ID profiling
- Immigration DNA test

In addition to performing identification and criminal paternity cases for medical examiner and law enforcement purposes, the Parentage & Identification Unit of the Cuyahoga County Regional Forensic Science Laboratory also provides DNA relationship services to the general public for the following legal purposes:

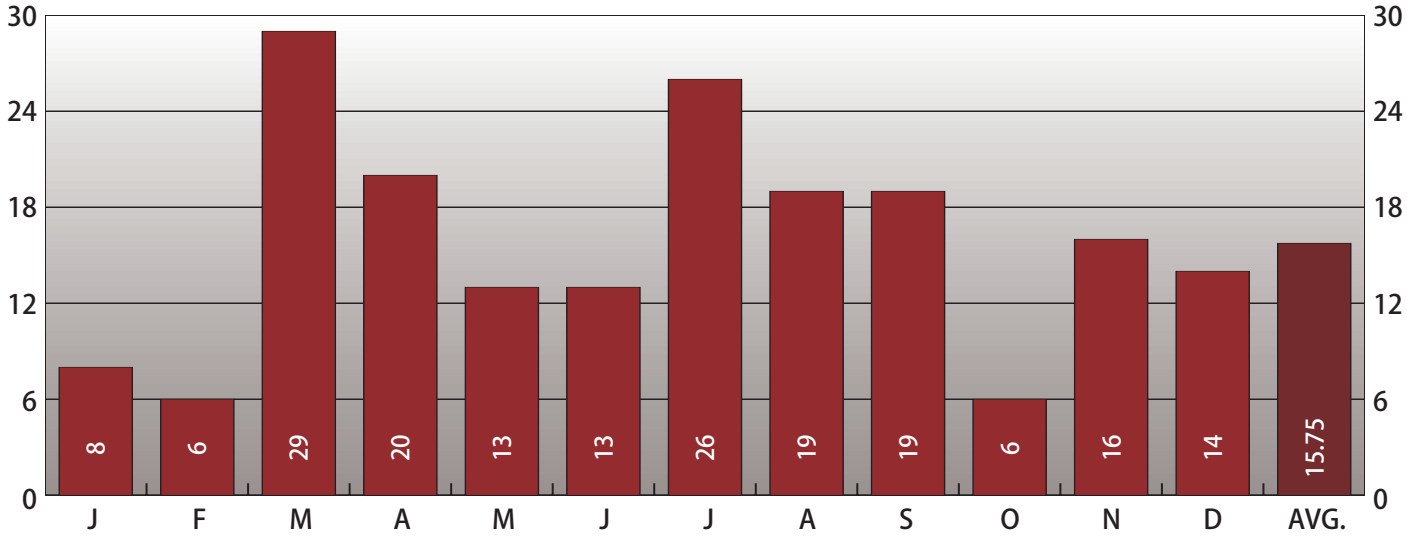
- Child Support
- Child Custody/Visitation Rights
- Immigration
- Adoption
- Insurance/Inheritance Claims
- Welfare and Social Security Cases

CASES SUBMITTED BY MONTH FOR THE YEAR 2023



2023
TOTAL CASES
138

CASES COMPLETED BY MONTH FOR THE YEAR 2023



Accurately determining the cause and manner of death is essential for the protection of public health and safety. Many disciplines are required to work together as a team to ensure that correct determinations are made. A critical part of the process in determining cause and manner of death is a forensically reliable Toxicology Unit. Toxicology as a scientific discipline is the study of how chemicals and drugs adversely affect living organisms. The sub-discipline of Forensic Toxicology is concerned with toxicity to humans and the medico-legal consequences, where the results are likely to be used in court. Forensic Toxicologists may be involved with postmortem toxicology, behavioral or human performance toxicology, and/or forensic drug testing. The Toxicology Laboratory at the Cuyahoga County Medical Examiner's Office (CCMEO) performs all of these types of testing with a primary emphasis on postmortem toxicology.

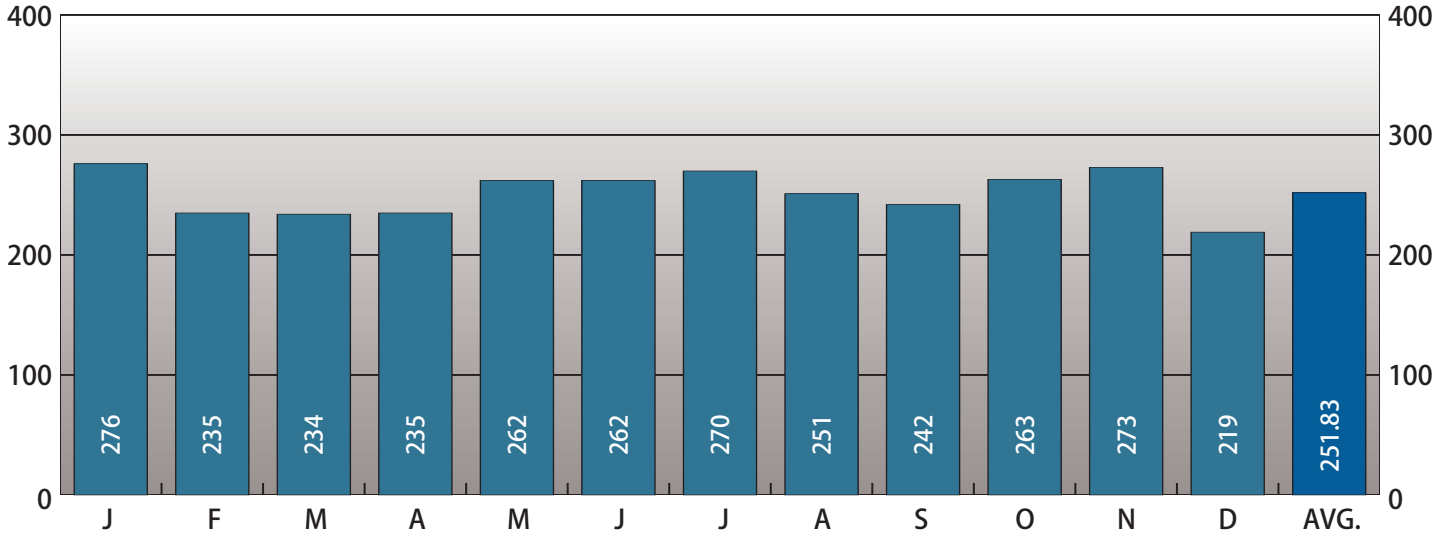
Postmortem toxicology is performed to assist pathologists, coroners or medical examiners determine whether drugs, alcohol or chemicals played a role in causing the death of an individual. The Toxicologist identifies and quantifies the drugs present in postmortem fluids and tissues and provides interpretation of the results as to whether the level represents a therapeutic, toxic or lethal concentration. During this process the Pathologists need to have the ability to interact with the Toxicology staff to discuss cases. Toxicologists consult on pharmacology, specimen selection, drug metabolism and elimination kinetics, drug-drug interactions, drug stability, tolerance, postmortem artifacts and provide expert witness testimony in court.

Human performance toxicology deals with living subjects who may have been stopped for impaired driving or the victim of a crime, such as drug facilitated sexual assault. Probation testing, similar to work place drug testing, detects the use of controlled substances by individuals who are being monitored by the courts.

The Toxicology Laboratory is one of an elite group of laboratories accredited by several national accrediting agencies. In 2004, the CCMEO Toxicology Laboratory was the 13th laboratory to become accredited by the American Board of Forensic Toxicology (ABFT). In 2006, the laboratory received accreditation by the American Society of Crime Lab Directors/Laboratory Accreditation Board (ASCLD LAB). In 2012, the Toxicology Laboratory was included as part of the CCMEO accreditation by the National Association of Medical Examiners (NAME). Very few offices have Toxicology laboratories which possess multiple accreditations; this accomplishment demonstrates the continued focus on promoting scientific excellence.

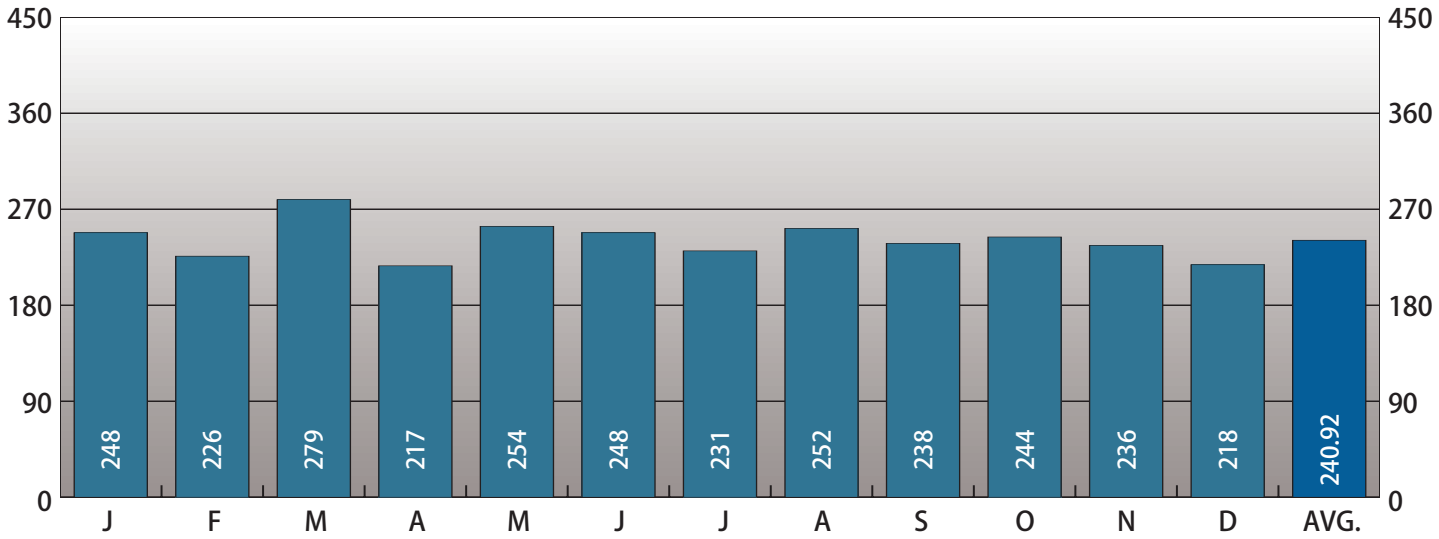
Within the newly realigned Cuyahoga County Regional Forensic Science Laboratory (CCRFSL), the Toxicology Department is a full service laboratory providing postmortem toxicology, human performance toxicology, forensic drug testing, and interpretation and consultation for Cuyahoga County and over 100 surrounding law enforcement, judicial and forensic agencies. More than 3,500 cases are processed each year involving over 50,000 specific analytical assays.

CASES SUBMITTED BY MONTH FOR THE YEAR 2023



2023
TOTAL CASES
3,022

CASES COMPLETED BY MONTH FOR THE YEAR 2023



The Trace Evidence Unit was formed from within the Cuyahoga County Coroner's Office in the early 1950's as a response to the burgeoning field of Forensic Science. It was realized early that reliable and accurate scientific analysis of evidentiary materials would not only compliment the determination of cause and manner of death but would serve the judicial needs of the Court System and by extension, the citizens of Cuyahoga County.

Initially tasked with the chemical and immunological detection of biological fluids, the Trace Evidence Unit soon branched into the microscopic examination of trace evidence materials such as hairs, fibers, paint, and soil.

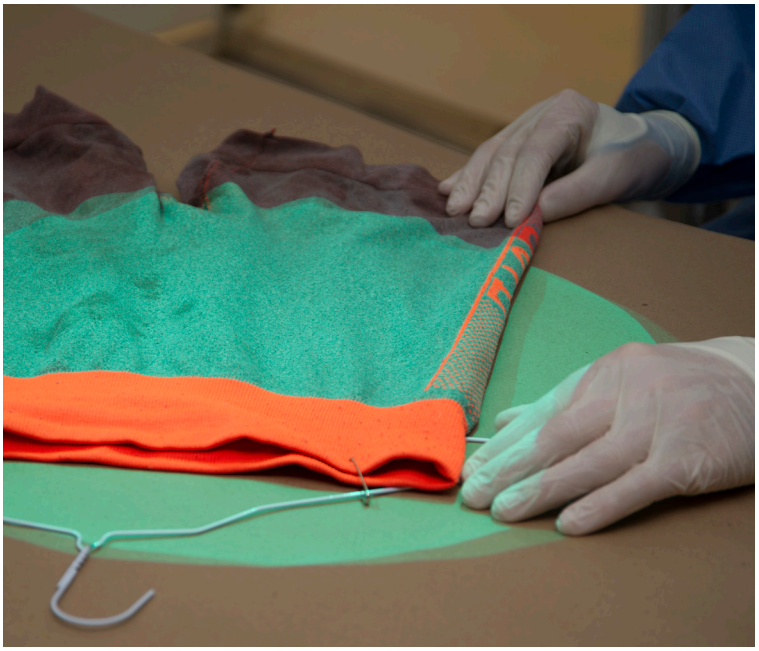
The 1970's through the 1990's brought about an explosion of compact and affordable scientific instrumentation. The Trace Evidence Unit, realizing the usefulness of augmenting chemical, immunological, and microscopic forensic examination with scientific instrumentation embarked on a process of acquiring instrumentation that would allow for the identification, individualization, and/or discrimination of trace evidence materials.

The Trace Evidence Unit currently employs four Forensic Scientists. The responsibilities of the Trace Evidence Unit include the examination and sample collection from the hands and bodies of victims of violent death as well as the examination of clothing items received with the victims. A clothing examination may include the determination of bullet / sharp instrument damage, the determination of range of fire, and the collection of trace evidence materials such as fibers, paint, or other debris. The Trace Evidence Unit is also responsible for the examination and comparison of materials such as hairs, fibers, paint, imprints/impressions, pressure sensitive tape, gunshot residue, polymers, and unknown materials.

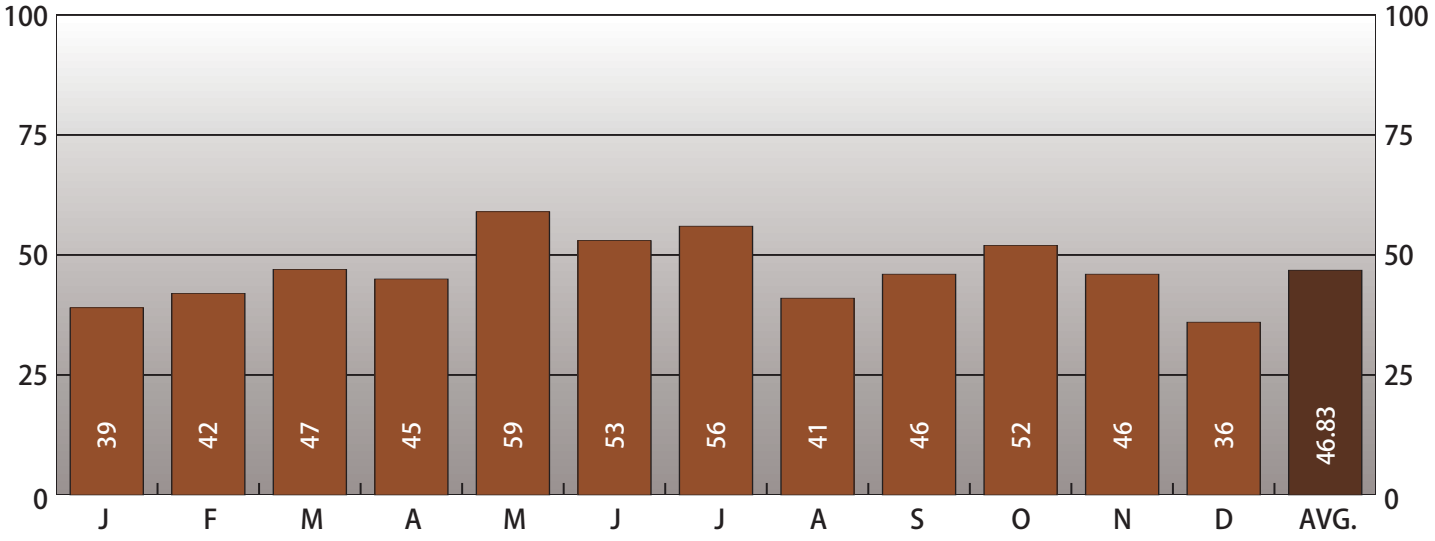
The Trace Evidence Unit is equipped with research grade stereo, compound, comparison, and polarized light microscopic equipment as well as cutting edge scientific instrumentation such as a Fourier Transform Infrared Spectrometer, a Raman Spectrometer, a UV/VIS/NIR Microspectrophotometer, a Scanning Electron Microscope, and an Energy Dispersive X-ray Spectrometer.

Outside of the laboratory, the Trace Evidence Unit may assist Law Enforcement Agencies with the collection and processing of complex crime scenes. The Trace Evidence Unit also engages in training for Law Enforcement Agencies. Training on crime scene documentation and processing as well as the value of Trace Evidence are some of the topics provided.

The Trace Evidence Unit, as part of the Cuyahoga County Regional Forensic Science Laboratory, has been accredited by ANSI-ASQ National Accreditation Board, (ANAB), formerly the American Society of Crime Lab Directors, Laboratory Accreditation Board, (ASCLD-LAB) since 2006.



CASES SUBMITTED BY MONTH FOR THE YEAR 2023



2023
TOTAL CASES
562

CASES COMPLETED BY MONTH FOR THE YEAR 2023

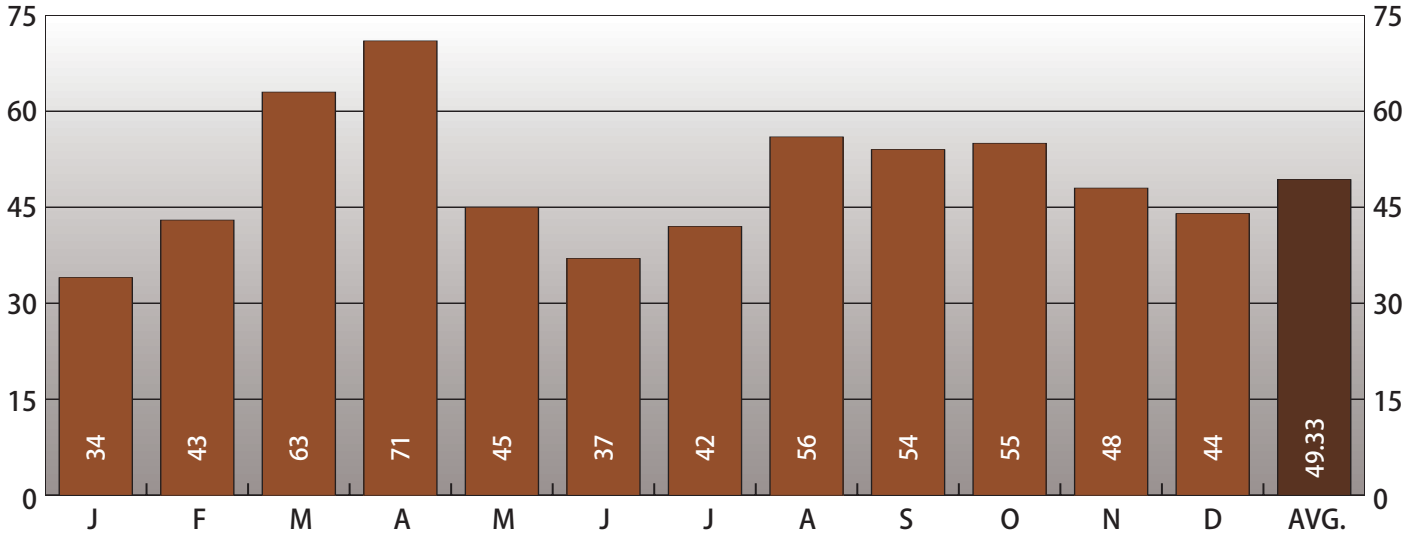


TABLE 9 REGIONAL FORENSIC SCIENCE LABORATORY STATISTICS

	Total
Investigations	
Cases	7177
Scene Visits	1405
Pathology	
Radiographs of In-County Cases	3187
Radiographs of Outside-County Cases	1080
In-County Autopsied Cases Requiring X-Rays	463
Outside-County Autopsied Cases Requiring X-Rays	233
Average Number of Images per X-Rayed Case	4.47
Percentage of Autopsied Cases Requiring Radiology	48.61%
Photography	
Recorded Images By Manner	83951
Homicides	28681
Accidents In The Home	13383
Accidents in Other Places	4130
Natural Causes	19545
Suicides	10498
Vehicular Accidents	4324
Accidents While at Work	284
No Manner Issued	152
Lifebanc Organ Donation	
Tissue Donors Recovered at the Cuyahoga County Medical Examiner's Office	95
General Office	
Requests for Records	4457
Histology	
Slides Made	7040

	Total
Drug Chemistry	
Cases Submitted	4039
Cases Completed	4502
Fingerprints	
Cases Submitted	101
Cases Completed	99
Decedents Fingerprinted	893
Tentative/Unknown Decedents Fingerprinted	237
Tentative/Unknown Decedents Identified by Fingerprints	193
Firearms & Toolmarks	
Number of NIBIN Leads	4903
Cases Completed (NIBIN Entries)	4425
Forensic DNA	
Cases Submitted	1544
Cases Completed	1811
Profiles Entered into CODIS	890
Matches/Hits Received from CODIS	414
Parentage and Identification	
Cases Submitted	138
Cases Completed	189
Toxicology	
Cases Submitted	3022
Cases Completed	2891
Trace Evidence	
Cases Submitted	562
Cases Completed	592

The Cuyahoga County Medical Examiner's Office has the oldest Forensic Pathology Fellowship Training program in the United States.

DID YOU KNOW?

Cuyahoga County Medical Examiner's Office
11001 Cedar Avenue
Cleveland, Ohio 44118
(216) 721-5610
cuyahogacounty.gov/medical-examiner

Additional statistics are available upon request.
Please contact the Cuyahoga County Medical Examiner's Office
to request statistics not included in this report.