

Indiana State Department of Toxicology

2019 Annual Report



CERTIFICATE OF ACCREDITATION

ANSI National Accreditation Board
2000 Regency Parkway, Suite 430, Cary, NC 27518

This is to certify that

**Indiana State Department of Toxicology
Breath Alcohol Calibration**

has been assessed by ANAB
and meets the requirements of

ISO/IEC 17025:2005

ANAB 17025:2005 Forensic Science Calibration Laboratories
Accreditation Requirements:2017

while demonstrating technical competence in the field of

FORENSIC CALIBRATION

Refer to the accompanying Scope of Accreditation for information
regarding the types of calibrations to which this accreditation applies

Certificate Number: FC-0012

Valid to: 08/31/2023

Handwritten signature of Pamela L. Sale in black ink.

Pamela L. Sale
Vice President, Forensics



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ANAB 17025:2005 Forensic Science Testing Laboratories
Accreditation Requirements:2017

while demonstrating technical competence in the field of

FORENSIC TESTING

Refer to the accompanying Scope of Accreditation for information
regarding the types of tests to which this accreditation applies

Certificate Number: FT-0150

Valid to: 08/31/2023

Handwritten signature of Pamela L. Sale in black ink.

Pamela L. Sale
Vice President, Forensics



Indiana State Department of Toxicology

Cover photo:

The front cover displays the Certificates of Accreditation awarded to the Department of Toxicology by ANSI National Accreditation Board (ANAB) on May 11, 2019. The Forensic Testing Certificate is awarded for the agency's analytical laboratory and the Forensic Calibration Certificate for the agency's breath test program. Over 500 external and internal standards, policies, and procedures were evaluated by ANAB during the successful audit process. Accreditation means that the department is in compliance with international standards (ISO/IEC 17025), the accreditation body's standards (ANAB), and the department's own policies and procedures. The Department of Toxicology is proud to stand with the Indiana State Police and the Indianapolis-Marion County Forensic Services Agency as one of the accredited forensic laboratories serving the state of Indiana justice system.

In addition to ISDT becoming accredited in 2019, one of its forensic scientists was certified by the American Board of Forensic Toxicology.

Overview

The Indiana State Department of Toxicology (ISDT) is divided into two areas: analytical laboratory services and the breath test program. Both areas provide forensic toxicological services for the state of Indiana.

The mission of ISDT is to provide quality forensic toxicological services and education for the state of Indiana. The Department’s objectives are to provide an accurate and reliable alcohol breath test program, produce quality toxicology analyses of blood samples for alcohol and selected drugs, supply expert testimony, and provide education on the science of forensic toxicology.

ISDT management and staff understand that quality results are obtained through professional, ethical, and unbiased analyses of evidentiary specimens entrusted to the Department for testing. ISDT’s policy of open communication and ability to provide instruction on the science of forensic toxicology facilitates the interpretation and understanding of test results.

Budget

The Department budget is comprised of general fund appropriations, limited breath test program fees, and, when awarded, federal grants. In 2019, the Indiana Criminal Justice Institute (ICJI) awarded the ISDT \$1,135,000 from National Highway Traffic Safety Administration funds for reduction of its analytical drug case backlog/turnaround times. These funds were used to successfully decrease the backlog/turnaround times for drug analysis in traffic-related cases.

Staffing

ISDT ended 2019 with 21 of its 24 positions filled, as detailed in Table 1. The Department contracts with the Indiana Office of Technology, the State Budget Agency, and the State Personnel Department for computer support, accounting services, and human resource matters, respectively. ISDT filled a vacant forensic scientist position in 2019. This additional scientist contributed to the agency’s successful reduction in blood alcohol case backlog/turnaround times. The organization chart and contact information for ISDT are provided in the last two pages of this report.

Table 1: Department of Toxicology Staffing as of 12/31/18

Position	Staff	Position	Staff
Director	1	Analytical Lab Supervisor	1
Assistant Director	1	Forensic Scientist	10
Toxicologist/QC Coordinator	1	Evidence Control Specialist	2
General Counsel	1	Breath Test Program Supervisor	1
Program Coordinator	1 (1 vacant)	Breath Test Instrument Inspector	4 (1 vacant)
Administrative Assistant	1 (1 vacant)		

Training

In furtherance of ISDT's objective of providing education on the science of forensic toxicology, the department toxicologist provided training at two Drug Recognition Expert schools, four Indiana Law Enforcement Academy Police Basic Training schools, an Allen County Bar Association conference, and a forensic nurses training course. The assistant director was invited to guest lecture at Indiana University–Purdue University at Indianapolis, Purdue University at Lafayette, and she spoke at the IPAC Trial Advocacy course for prosecutors. Finally, the laboratory supervisor and the breath test program supervisor were guest lecturers at Indiana University–Purdue University at Indianapolis.

ISDT staff also attended numerous trainings in 2019. The assistant director and a forensic scientist attended ANAB Assessor training, and the assistant director also attended the Midwest Crime Directors Meeting. The department toxicologist attended the International Association for Chemical Testing conference. Two breath test instrument inspectors attended the Intoximeters Maintenance School for the Intox EC/IR II breath test instrument, and the general counsel attended two OVWI defense seminars.

Employees who attended training or conferences shared the knowledge gained with other ISDT staff.

Customers

ISDT analyzed blood specimens submitted by 392 agencies in 2019. The number of agencies submitting cases for analysis remained basically the same as in 2018 and 2017. Submissions came from coroners, town marshals, municipal and county departments, and state law enforcement agencies. ISDT received cases from seven agencies that had not previously submitted cases to ISDT; plus nineteen agencies that had not submitted cases in 2018 (but had submitted cases in prior years) submitted cases in 2019. Most agencies submit specimens for analysis in evidence collection kits provided by the Department. ISDT encourages agencies to return expired ISDT-furnished evidence collection kits for refurbishment and redistribution, which results in cost savings to the Department of approximately \$3.00 per kit.

The breath test program includes 4,970 trained and certified breath test operators who are employed by 349 different law enforcement agencies. The number of trained and certified breath test operators has risen in comparison to 2018 and is approaching the number reported in 2017.

The online program introduced in 2017 that allows the public to obtain certified copies of certifications of breath test instruments and breath test operators has been very successful. ISDT continues to receive very few requests for these records.

ISDT's web site (www.IN.gov/isdt) was updated in 2019 to provide new information, such as the agency's analytical testing and breath test program test methods. As with the certifications of breath test instruments and breath test operators, posting the test methods on the web site makes the information more accessible to the public. It also makes the test methods available for use by other forensic laboratories. The site also contains information on ordering evidence collection kits, sample submission protocols, drugs included in testing, available breath test operator

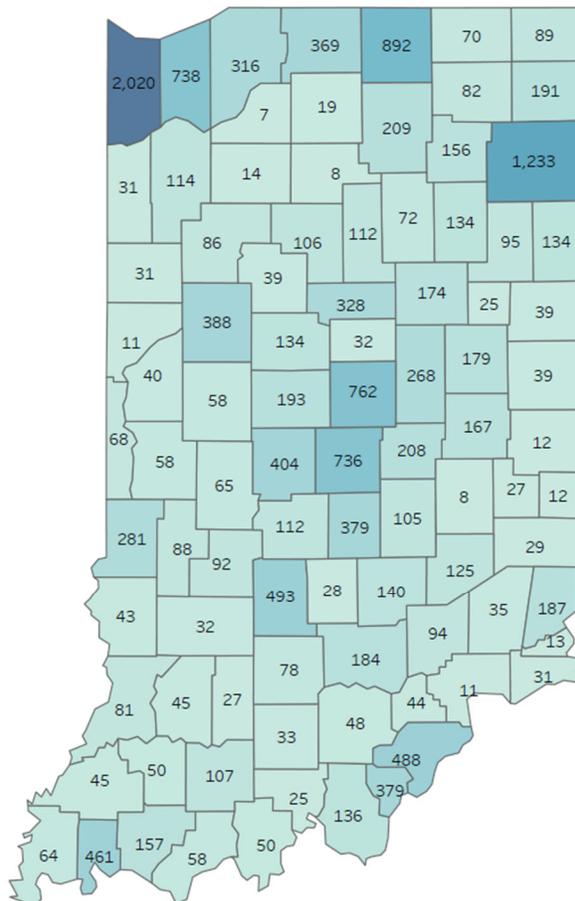
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training, breath test program fees, directions for use of the online breath test officer recertification program, a link to the database that provides free, certified copies of breath test instrument and operator certifications, as well as a list of certified ignition interlock device models with contact information for the device providers.

The 2018 Annual Report cover depicted, by county, the number of completed evidentiary breath tests administered in 2018 and the number of cases submitted to the agency for laboratory analysis. Due to the positive feedback the Department received regarding this information, these two maps have been updated with 2019 information and are included in this report. As stated last year, all counties use the Intox EC/IR II evidentiary breath test instrument provided by the Department of Toxicology, while using a combination of private laboratories, hospitals, and the Department of Toxicology for their laboratory analysis.

Figure 1

2019 Completed Breath Tests



Testimony

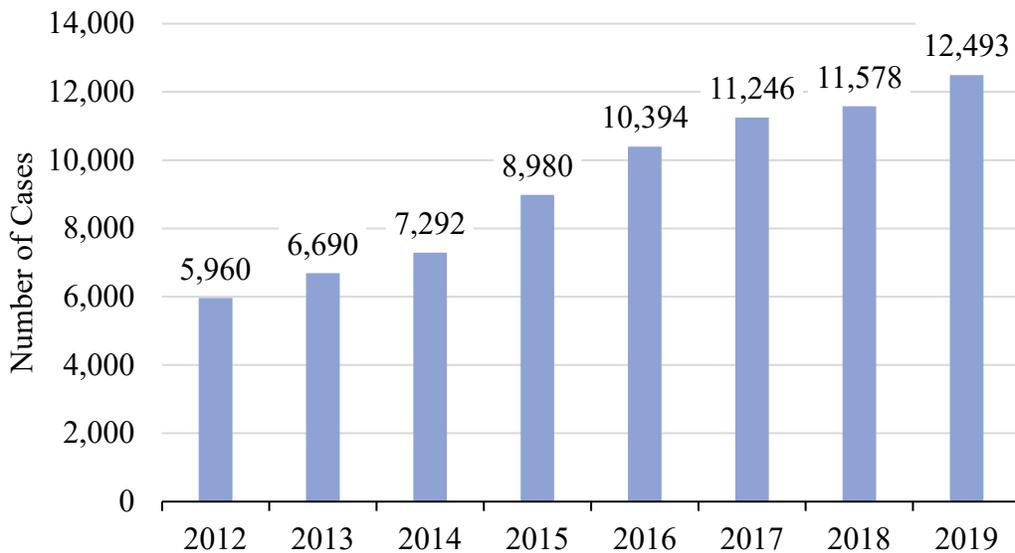
The Department received approximately 787 subpoenas in 2019 (a 22% decrease from 2018), related to laboratory testing, breath tests, and interpretation of laboratory and breath test results. Testimony was provided only 58 times: 23 times by forensic scientists and the assistant director, once by the breath test program supervisor, and 34 times by the forensic toxicologist. This is a 9% decrease from 2018 and a 44% reduction from 2017. Several times during 2019, as in past years, ISDT personnel appeared in response to a subpoena but did not testify due to a plea agreement or continuance.

Blood Analysis

ISDT continued to see an increase in case submissions in 2019 as compared to 2018 and every year since 2012, as shown in Chart 1. The Department received 12,493 submissions in 2019, which is 915 more cases than were received in 2018, or an increase of approximately 8%. Submissions have climbed steadily since the Department's first year as a state agency in 2012.

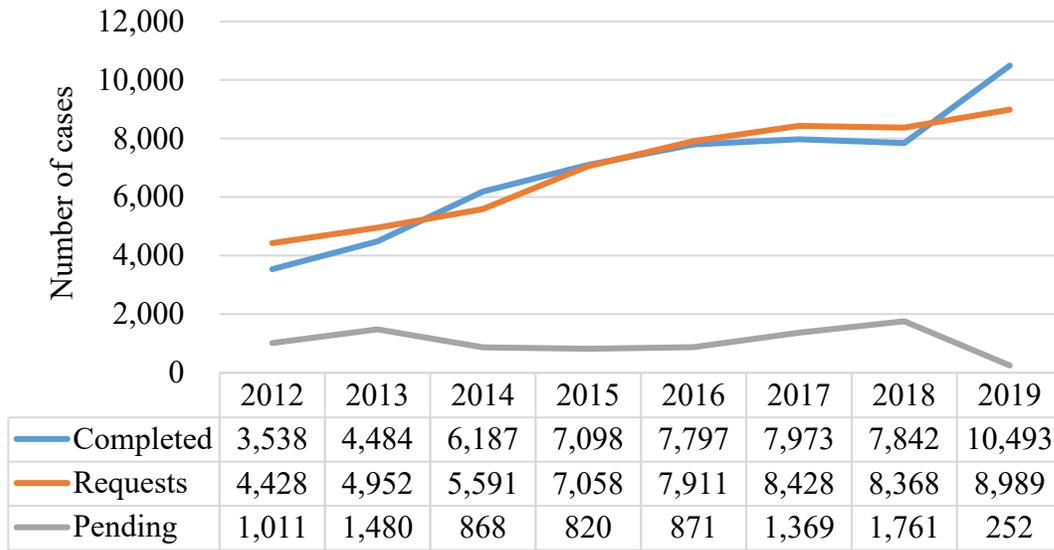
Cases may be submitted to ISDT for alcohol analysis, drug analysis, or both. Cases submitted in 2019 included 8,989 requests for alcohol analysis and 8,236 requests for drug analysis. In total, the Department received 17,225 requests for analysis in 2019. Of the cases submitted for analysis, 62%, or 7,745 cases, had both alcohol and drug requests.

Chart 1: Department of Toxicology Submissions



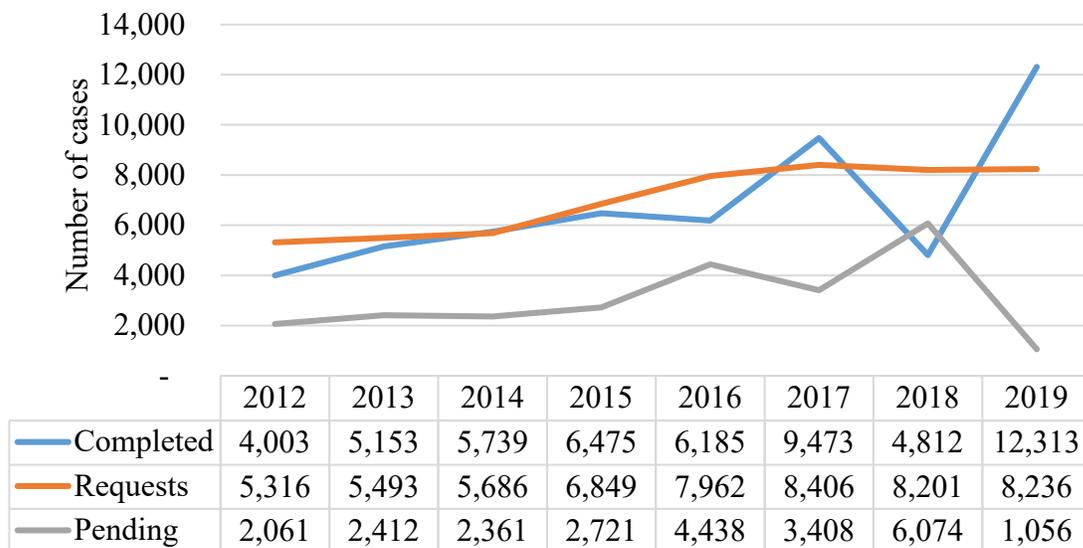
ISDT completed 10,493 requests for alcohol analysis in 2019, compared to 7,842 requests in 2018, as shown in Chart 2. The addition of a 10th scientist and the dedication of existing scientists to alcohol backlog/turnaround time reduction allowed ISDT to reduce the backlog/turnaround time significantly, even while the number of alcohol requests continued to increase.

Chart 2: Alcohol Analyses Completed, Requests, and Pending



Completed requests for drug analysis totaled 12,313 in 2019, as shown in Chart 3. This significant increase in drug request completions from previous years can be attributed to the extraordinary support provided by ICJI as well as the increase in production by ISDT scientists. ISDT doubled its drug screening capabilities—to two instruments and four scientists—by completing validation of a second screening instrument and training two additional scientists in drug screening. These factors, in conjunction with a slight increase in drug analysis submissions as compared to 2018, allowed ISDT to accomplish its 2019 goal of reducing backlog/turnaround times for drug cases pending screening by year-end, to the extent that the number of pending drug cases was reduced to an eight-year low at the end of 2019.

Chart 3: Drug Analyses Completed, Requests, and Pending



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Of cases screened for drugs in 2019, 72% screened positive for one or more drugs or drug metabolites, compared to 68% in 2018. Of the 2019 cases that screened positive, 20.6% were positive for opioids (with 9.7% positive for Fentanyl), which was a decrease from 2018. Benzodiazepines/z-drugs and stimulants also decreased to 21.4% and 30.5% respectively. Muscle relaxants and barbiturates remained consistent at 1.3% and less than 1% respectively. Drugs from the cannabinoids class decreased most significantly, from 60.6% in 2018 to 40.4% in 2019. The manner in which drug screening data is processed was updated in 2019. This update more precisely identifies the targeted cutoff concentration for all drugs and reduced the number of false positives for multiple drugs, particularly cannabinoids.

A list of all the drugs and drug metabolites included in the Department’s current drug screening panel is available on ISDT’s web site www.IN.gov/isdt.

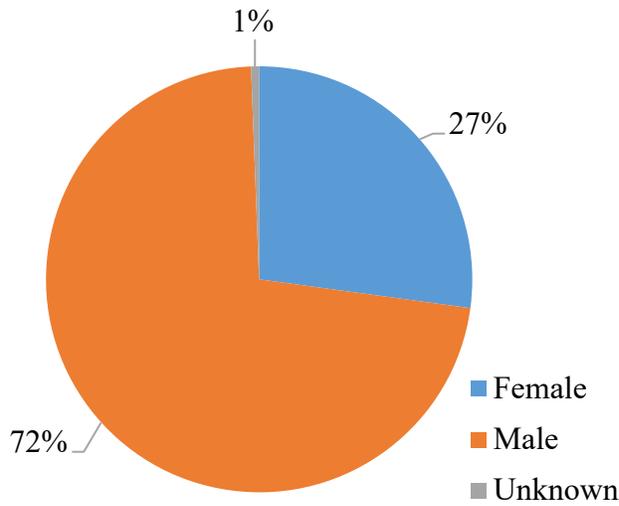
As shown in Table 2: Pending Analysis Summary, there were 1,308 pending alcohol and drug requests at the close of 2019. The majority of the pending requests were for drug analysis, which is consistent with all previous years depicted. But the number of pending cases, as stated earlier in this report and shown in this table, was at an all-time agency low. As the number of pending cases decreased, so did the ages of the cases awaiting analysis.

Table 2: Pending Analysis Summary

	2012	2013	2014	2015	2016	2017	2018	2019
Alcohol Analysis	1011	1480	868	820	871	1369	1761	252
Drug Analysis	2061	2412	2361	2721	4438	3408	6074	1056
Total	3072	3892	3229	3541	5309	4777	7835	1308
Over 15 Days	2012	2013	2014	2015	2016	2017	2018	2019
Alcohol Analysis	856	1390	680	555	681	1062	1492	6
Drug Analysis	1895	2318	2165	2477	4252	3095	5823	783
Total	2751	3708	2845	3032	4933	4157	7315	789
Over 30 Days	2012	2013	2014	2015	2016	2017	2018	2019
Alcohol Analysis	691	1063	461	261	396	762	1279	3
Drug Analysis	1688	1989	1956	2181	3944	2752	5586	483
Total	2379	3052	2417	2442	4340	3514	6865	486

When specimens are submitted to ISDT for testing, the submitting agency indicates offense information on the Toxicology Analysis Request form. In 2019, this information indicated that 67.3% of the requests received by ISDT were related to investigations of operating a vehicle while intoxicated; 18.0% were related to personal injury crashes, including serious bodily injury; 16.1% were related to property damage crashes, and 3.6% were related to fatal crashes, with other types of requests accounting for the remaining 8.7%. Some officers indicate multiple offenses on the analysis request form, which pushes the total percent for all types of offenses to above 100%. Nonetheless, of the 12,493 requests received, 92.9% were traffic-related.

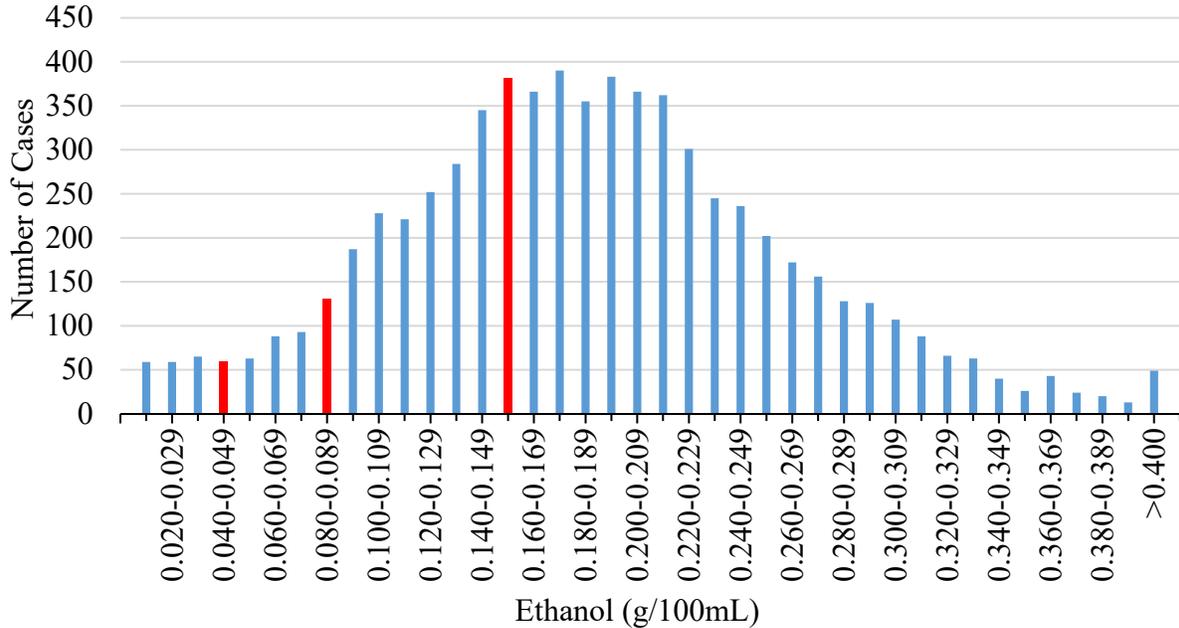
Chart 4: Blood Alcohol Analysis by Gender



As indicated by submitting agencies on Toxicology Analysis Request forms, the majority (72%) of specimens submitted for alcohol analysis were from male subjects, with specimens from female subjects comprising 27%. The distribution of male and female subjects remained the same in 2019 as reported for 2018 and 2017. The male-to-female ratio for blood alcohol analysis is also consistent with the ratio of male-to-female breath test subjects, which is 75% to 25%.

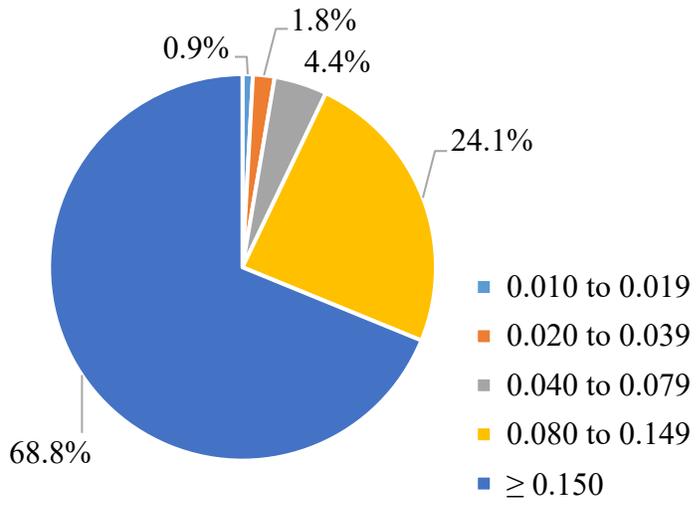
Chart 5 shows the distribution of blood alcohol analysis results by blood alcohol concentration. The red bars indicate the statutory alcohol limits for commercial driver license holders (0.040 g/100 mL of blood), and operation of a vehicle (0.080 and 0.150 g/100 mL of blood).

Chart 5: Blood Alcohol Case Distribution by Results



Of the total number of blood alcohol results reported, 92.9% of the alcohol concentrations were 0.080 g/100 mL of blood or higher, which is consistent with the 91.4% of breath test subjects (Chart 8) with alcohol concentrations of 0.080 g/210 L of breath or higher. The percentage of blood test subjects with alcohol concentrations of 0.150 g/100 mL of blood or higher was 68.8% (Chart 6), which is significantly more than the 42.8% of breath test subjects with alcohol concentrations of 0.150 g/210 L of breath or higher (Chart 8).

Chart 6: Blood Alcohol Subject Test Results by Selected Ranges



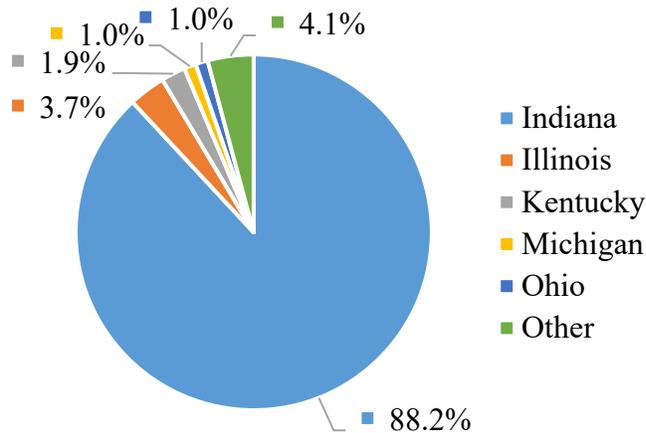
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instruments were deployed. The decrease in the number of breath tests completed could be one of the factors contributing to the increase in laboratory submissions, along with the desire of officers for both alcohol and drug testing. The six counties with the greatest number of subject tests administered were the same in 2019 as reported for 2018, 2017, and 2016 (Lake, Allen, Elkhart, Hamilton, Porter, and Marion). The actual order has varied slightly through the years, but Lake County has consistently had the greatest number of breath tests administered. These six counties accounted for approximately 47% of all the breath tests completed in 2019.

Table 3: County and Number of Subject Tests Conducted

Lake	2020	Jackson	184	White	86	Ripley	35
Allen	1233	Delaware	179	Noble	82	Orange	33
Elkhart	892	Grant	174	Knox	81	Greene	32
Hamilton	762	Henry	167	Lawrence	78	Tipton	32
Porter	738	Warrick	157	Wabash	72	Benton	31
Marion	736	Whitley	156	LaGrange	70	Newton	31
Monroe	493	Bartholomew	140	Vermillion	68	Switzerland	31
Clark	488	Harrison	136	Putnam	65	Franklin	29
Vanderburgh	461	Adams	134	Posey	64	Brown	28
Hendricks	404	Clinton	134	Montgomery	58	Fayette	27
Tippecanoe	388	Huntington	134	Parke	58	Martin	27
Floyd	379	Decatur	125	Spencer	58	Blackford	25
Johnson	379	Jasper	114	Perry	50	Crawford	25
St. Joseph	369	Miami	112	Pike	50	Marshall	19
Howard	328	Morgan	112	Washington	48	Pulaski	14
LaPorte	316	Dubois	107	Daviess	45	Ohio	13
Vigo	281	Cass	106	Gibson	45	Union	12
Madison	268	Shelby	105	Scott	44	Wayne	12
Kosciusko	209	Wells	95	Sullivan	43	Jefferson	11
Hancock	208	Jennings	94	Fountain	40	Warren	11
Boone	193	Owen	92	Carroll	39	Fulton	8
DeKalb	191	Steuben	89	Jay	39	Rush	8
Dearborn	187	Clay	88	Randolph	39	Starke	7

Chart 7: State of Issued Driver License

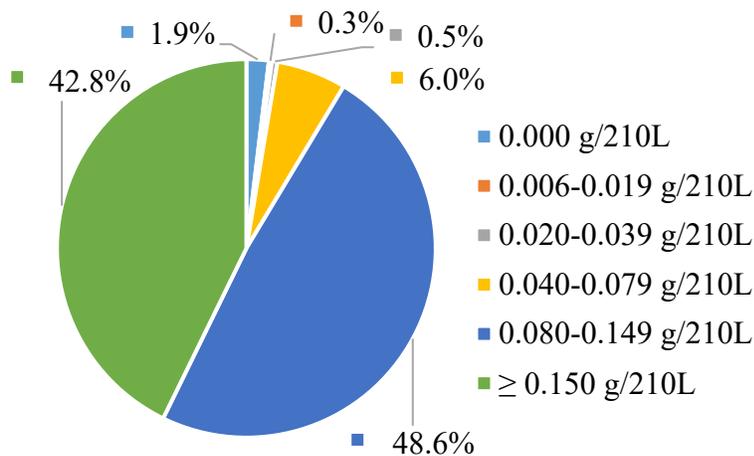


Of the subjects tested in 2019, 88.2% had licenses from Indiana, 3.7% from Illinois, 1.9% from Kentucky, 1.0% each from Michigan and Ohio, and the remaining 4.1% were from other states and countries. This breakdown by states is consistent with the percentages reported for 2018, 2017 and 2016.

Of the subjects whose tests resulted in at least two reported breath alcohol concentrations, approximately 8.6%

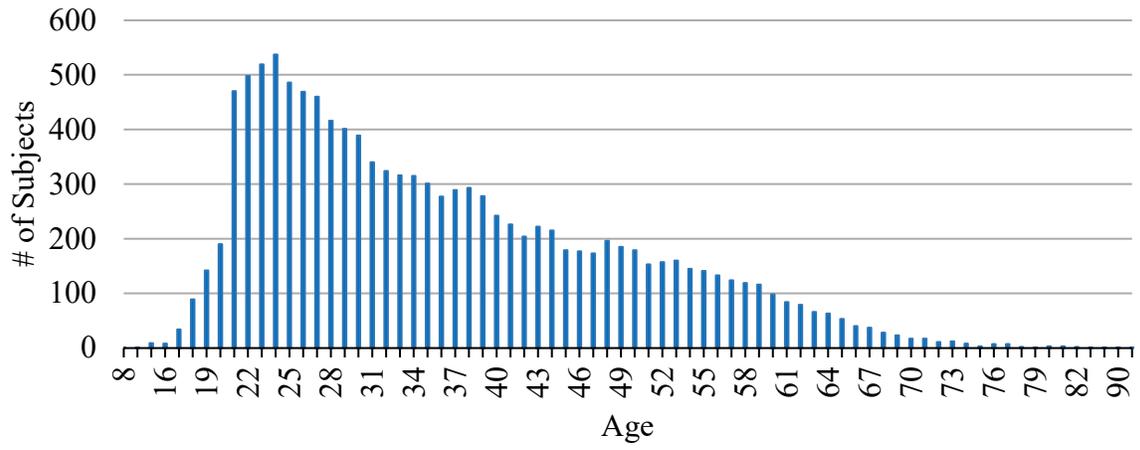
had results between 0.000 and 0.079 g/210 L of breath; 48.6% had results between 0.080 and 0.149 g/210 L of breath; and 42.8 % had results of 0.150 g/210 L of breath or higher, as indicated in Chart 8. Subjects with breath alcohol concentrations over 0.040 g/210 L of breath, but under the 0.080 g/210 L of breath limit for vehicle operation, constituted 6.0% of all breath test subjects.

Chart 8: Subject Breath Alcohol Test Results by Selected Ranges

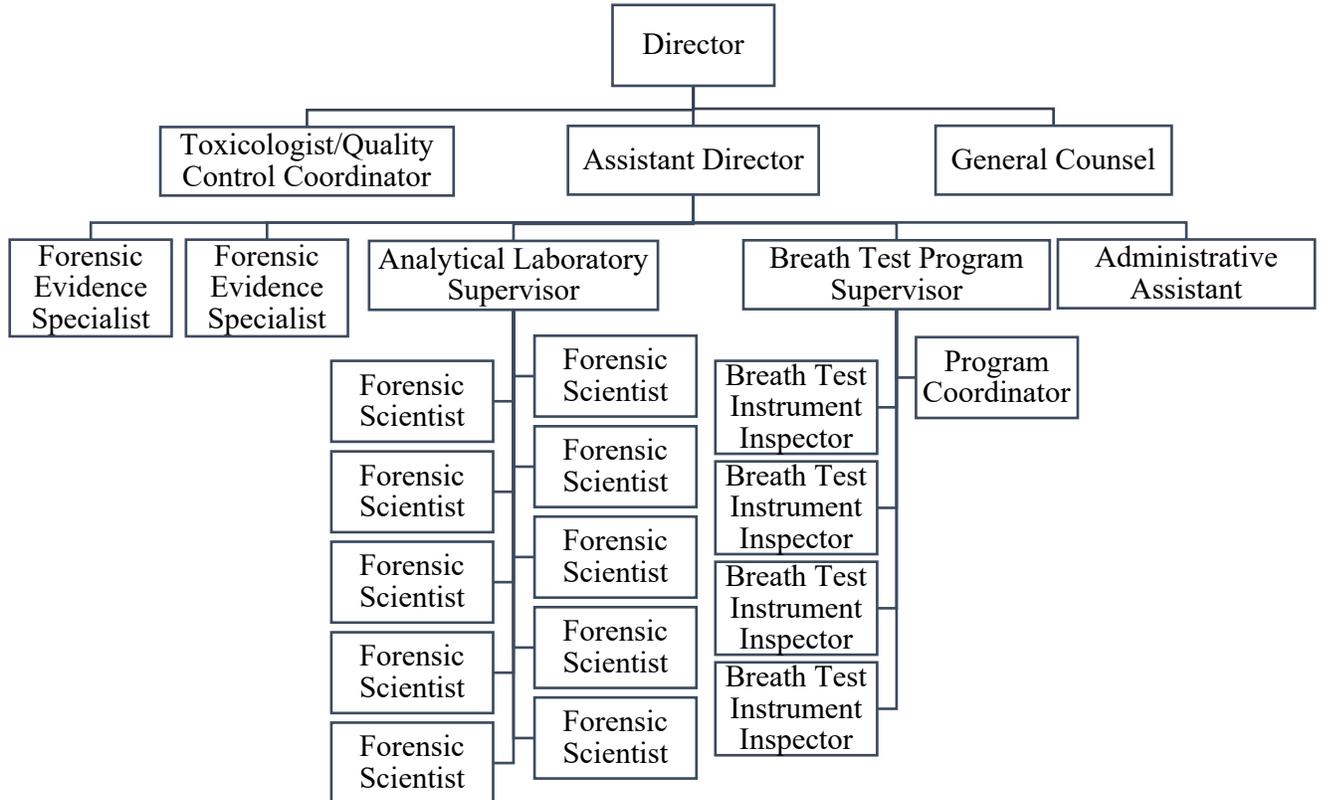


As shown in Chart 9, the ages of subjects tested using the Intox EC/IR II evidentiary breath test instrument were between 8 and 91 years old, with the greatest number of subjects at age 24, or 4.5% of all tests attempted. Subjects under age 21 constituted 3.9% of all subjects tested in the 2019 distribution, as compared to 4.4% in 2018 and 4.6% in 2017.

Chart 9: Number of Breath Alcohol Test Subjects by Age



Organizational Chart



Contact Information:

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