Senate Enrolled Act No. 561

Medical Examiner Feasibility Study

Final Report

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Executive Summary

The objective of this project was to conduct a study of the needs and feasibility of establishing a state medical examiner's office. The methodology included: a) surveys and interviews of more than 300 stakeholders; b) review of the relevant scientific and historical literature; c) interviews of coroners, medical examiners, and forensic pathologists; d) consultations with state agency leaders; e) review of quality assurance standards related to death investigation; and f) review of construction requirements for forensic facilities.

The Indiana Coroners Training Board reported that in 2018 approximately 5,100 forensic autopsies were performed in the State of Indiana. Coroners are responsible for establishing service agreements with pathologists, as well as for autopsy facilities within their counties, neighboring counties or in other states. These autopsies were conducted in hospital morgues, coroner's offices, universities, funeral homes, and in one case, a pole barn.

In Indiana, forensic autopsies were performed by either clinical pathologists or board-certified forensic pathologists with the number of autopsies performed by each pathologist varying from just a few to over 800 in a single year.

The variability in the number of autopsies performed by each pathologist presents a quality assurance issue given the national standard recommendation that limits the number performed by a pathologist to no more than 250 per year. Completion of an estimated 6,000 autopsies annually, in accord with national standards, would require the services of at least 24 board-certified forensic pathologists assuming an evenly distributed caseload.

Another area of concern is the facilities in which some forensic autopsies are performed. National standards for autopsy facilities recommend the following features: a) controlled access; b) ample space and separation for staff; c) autopsy suites with ceiling to floor airflow with an air exchange rate of 12 per hour under negative pressure; d) sufficient body storage capacity; e) an s area for evidence processing; and f) consideration for Biosafety Level 3 operational capabilities. Outdated hospital morgues, funeral homes and pole barns rarely meet these criteria.

In Indiana, the scarcity of full-time board-certified forensic pathologists and the lack of facilities suitable for conducting proper forensic autopsies compromises the quality of medical legal death investigations and puts at risk the public health and safety of its citizens.

The current system of independent county coroner offices costs Indiana taxpayers approximately $18,000,000 annually.

Establishing a Postmortem Examination Commission in support of county coroners would mitigate existing deficiencies throughout the state by exploring options for making available; a) additional forensic pathologists; b) facilities suitable for performing forensic autopsies; and c) standardized practices for medicolegal death investigations.

Cost estimates for facilities and staffing expansion options:

a) The construction and staffing costs of a single centralized facility would be approximately **$45,000,000** with recurring annual costs of **$10,185,000.**

b) The construction and staffing costs of a five-facility regional system would be approximately **$66,000,000** with recurring annual costs of **$11,610,000.**

Introduction

Senate Enrolled Act No. 561 directed the Superintendent of the Indiana State Police Department in consultation with the Indiana State Coroners' Association, Indiana Sheriff's Association, and the Coroners' Training Board to; a) study the feasibility of establishing a state medical examiner office and, if established; b) determine which state agency should administer the office. (Appendix A)

The purpose of this report is to summarize the findings of the study in terms of the need and oversight for a Medical Examiner Office and relevant accreditation, certification, training standards, and under what circumstances medical examiner office services should be required.

Methodology

The methods used in this Medical Examiner Feasibility Study involved several interrelated activities including surveys and interviews of stakeholders (Appendix B), review of the scientific literature focused on medicolegal death investigation, tours of autopsy facilities, interviews of practicing coroners, medical examiners and forensic pathologists, consultation with state agency directors, review of the literature addressing the quality assurance standards associated with medicolegal death investigation, as well a review of construction requirements for forensic facilities.

More than 300 stakeholders contributed information related to this study, helping to ensure that the study results are representative of a broad spectrum of views and opinions regarding medicolegal death investigations in the State of Indiana.

History of Indiana Laws

Four years after the end of the American Revolutionary War, the Congress created the Northwest Territory by enacting the Ordinance of 1787. The ordinance established a government for the territory, including the land that would later become the State of Indiana. Section 7 of the ordinance directed the governor of the territory to "appoint such magistrates and other civil officers in each county necessary for the preservation of peace and good order", which allowed for the appointment of coroners in the Indiana Territory.[1]

In 1816, constitutional delegates convened in Corydon to draft and submit Indiana's first State Constitution. Article 4, Section 25 of the 1816 constitution states, "there shall be elected in each county, by the qualified electors thereof, one sheriff and one coroner", in effect creating a constitutional requirement for the office of county coroner.

A second Indiana Constitutional Convention convened in 1851 in the Hall of the House of Representatives to address issues involving both judicial and legislative matters. Included in the new constitution was Article 6, Section 2, a reiteration of the constitutional requirement for the election of a county coroner.

Over time, several laws have been enacted in Indiana with respect to medicolegal death investigation. The most relevant Indiana Codes (I.C.) include I.C. 36-2-14 (1852), the County Coroner, I.C. 4-23-6 (1959), the Commission on Forensic Science, I.C.4-23-6.5-3 (1994) the Indiana Coroners Training Board, and I.C. 10-11-11 (2019) the Office of Medical Studies at the direction of which this study was conducted.

History of Coroner and Medical Examiners Systems

Early British settlers in the colonies of North American brought with them the common laws of England including the coroner system, the purpose of which was to convene inquests after the notification of a death that occurred by violence or that was suffered in an untimely manner.

Of the original 13 states, all of which had instituted the coroner system, Maryland was credited with the first appointed coroner, Thomas Baldridge in 1637[2]. The earliest recorded "forensic-like" autopsy was performed in Massachusetts in 1662 on 8-year-old Elizabeth Kelly who was allegedly "killed" by witch Goody Ayres[3].

In the early 19th century, medical professionals began to question the efficacy of death investigations utilizing the age-old coroner system that predated the Magna Carta of 1215, and often lacked medically trained participants. In 1860, the State of Maryland enacted the first law in the United States requiring that a physician participate in death investigations[4]. Massachusetts replaced lay coroners with physicians in 1877[5].

Beginning in the 20th century, scientific and legislative bodies such as the National Academy of Science, the National Research Council, and the Commission on Uniform State Laws

recommended the use of physicians as medical examiners and the establishment of commissions to oversee the conduct of medicolegal death investigations.

In 1954 the Uniform Law Commission published the Model Postmortem Examination Act. Under its guidelines, each state would establish a Postmortem Examinations Office headed by a trained pathologist with jurisdiction over postmortem examinations of a criminal nature. The office would function under the direction of a commission of disinterested persons familiar with the problems associated with postmortem inquiries. In the years immediately following the passage of the Model Postmortem Examinations Act, several states converted from a coroner to a medical examiner system[6].

Four years after the passage of the Model Postmortem Examination Act, the Indiana General Assembly enacted I.C. 4-23-6 establishing a Commission on Forensic Science consisting of five members appointed by the governor (Appendix C). The objectives of I.C. 4-23-6 was to promote scientific information and services in pathology, radiology, photography, psychiatry, dentistry, anthropology, and other forensic sciences. No records of the commission could be located, and it is no longer active.

Since the 1990's, there has been limited activity with respect to states with coroners converting to a medical examiner system. Possible reasons for the lull in activity are a lack of funding, advocacy, and political support, as well as the demedicalization of society[7].

Scientific Committee Recommendations

In 2009, the National Research Council's Committee on Identifying the Needs of the Forensic Science Community issued its report addressing the shortcomings within the forensic sciences including medicolegal death investigation. The report made several recommendations directed toward medicolegal death investigation including the recommendation that; a) all medical examiners offices be accredited; b) all federal funding be restricted to accredited offices; and c) all forensic autopsies be performed by board-certified forensic pathologists certified by the American Board of Pathology.

The Organization of Scientific Area Committees for Forensic Science (OSAC), a national organization, was created by Congress in 2014. The purpose of OSAC, which is still active, is to strengthen and increase the nation's use of forensic science, including medicolegal death

investigation, by developing technically sound standards and protocols. In 2019, OSAC issued its proposed standards for medicolegal death investigation which includes the stipulation that such death investigations and offices be free of undue influence by other agencies and recommended that all organizations conducting medicolegal death investigations be accredited.

Present-Day Coroner and Medical Examiner Systems

In the United States there are currently several different medicolegal systems in operation. Indiana is one of 14 county-based coroner system states. The other 36 states function as either a centralized state medical examiner system, a county or district medical examiner system, or a combination of coroner and medical examiner systems[8].

In terms of oversight, 29 medicolegal death investigation systems in the United States are under the direction of a state health department or postmortem commission. The systems in the other 21 states are under the administration of offices of the attorney general, public safety, or university. One state medical examiner office is administered by a state police agency[9].

Accreditation and Certification

Accreditation is a program that provides evidence that a **system** adheres to nationally recognized quality assurance standards. The purpose of accreditation programs, which are typically voluntary, is to promote the adoption of transparency, autonomy, uniformity, oversight, and peer review as an organization's procedural guidelines.

Certification is a program recognizing that an **individual** has demonstrated competency and continued proficiency in a particular field that adds confidence in the accuracy and reliability of the individual's findings. Competency and proficiency are developed as a result of education, training, knowledge, and experience as evidenced by a formal testing process.

There are three national organizations in the United States recognized for providing accreditation inspections and certification testing services in the field of medicolegal death investigation. The National Association of Medical Examiners (NAME) has accredited 78 medical examiners offices[10]. The International Association of Coroners and Medical Examiners (IACME) has issued 29 accreditations, most of which are for coroners' offices[11]. The American Board of

Medicolegal Death Investigators (ABMDI) has certified more than 1,000 investigators nationwide[12].

Though not nationally recognized, Indiana Coroners Training Board provides 40 hours of basic training followed by 16 hours of annual continuing education to certify coroners and deputy coroners within the State of Indiana.

There are no NAME or IACME accredited facilities, and only a few ABMDI certified investigators currently in the State of Indiana.

Indiana

The current population of Indiana is approximately 6,700,000[13]. In 2019, a total of 66,000 deaths were reported in Indiana[14]. Based on the estimate that as many as 20% of all deaths result in some level of medicolegal investigation[15], the number of medicolegal death investigations could exceed 13,000 and the annual number of forensic autopsies could reach 6,000. Under the accreditation requirements for NAME, for the purposes of quality and safety, a forensic pathologist shall not perform more than 350 autopsies per year and a maximum of 250 is recommended[16]. Consequently, to perform an estimated 6,000 forensic autopsies annually, in accord with national standards, the services of at least 24 board-certified forensic pathologists would be required.

Each county coroner in Indiana is responsible for establishing agreements with forensic pathologists to perform forensic autopsies. The arrangements vary from county-to-county and range from a formal contract to a “handshake”. The fees charged to county coroners by the pathologists are independently negotiated and differ based on the proffered services.

Costs for autopsies ordered by private parties range from $2,500 to $5,000[17]. Autopsies ordered as part of a medicolegal death investigation cost county coroners between $850-$2,000 depending on whether consultation and court testimony is included[18]. Performing the estimated 6,000 forensic autopsies annually would cost Indiana counties a total of approximately $9,000,000.

The annual per capita spending rate for coroner offices varies greatly across the state, ranging from $0.55-$7.00. The statewide average is $2.73 per capita, with total estimated state spending

of approximately $18,000,000[19]. Increasing the per capita spending rate to the recommended level of $4.50[20] would result in an annual increase in available funding for the improvement of medicolegal death investigation by $14,000,000.

Obstacles to Quality

Variable numbers of forensic autopsies performed by individual pathologists:

The Indiana Coroners Training Board reported in 2018 approximately 5,100 forensic autopsies were performed in the State of Indiana by either a clinical pathologist or a board-certified forensic pathologist[21]. There was considerable variation in the number of autopsies performed by each pathologist in a single year, ranging from a few to several hundred. The uneven distribution among Indiana pathologists regarding the number of autopsies performed is outside the bounds of national standards and reflects the scarcity of full-time forensic pathologists available to county coroners in Indiana.

Ineffective communication:

The lack of a sufficient number of forensic pathologists under contract to county coroners may result in uncertainty regarding pathologist availability, which may affect communication regarding case information, consultation, pretrial meetings, court testimony and cost. The result of a lack of effective communication is a paucity of collaboration, information sharing, and coordination of related activities, all of which are essential to effective medicolegal death investigations.

Inadequate facilities:

A recent survey of county coroners in Indiana reported that forensic autopsies were performed in a variety of facilities including hospital morgues, coroners' offices, funeral homes, and in one case a pole barn. National standards for autopsy facilities recommend that forensic autopsies be conducted in laboratories under the following guidelines: a) controlled access; b) space and separation for both autopsy and administrative staff; c) autopsy suites with ceiling to floor airflow with an air exchange rate of 12 exchanges per hour under negative pressure; d) sufficient body storage capacity; e) a separate area for evidence processing; and f) consideration for

Biosafety Level 3 operational capabilities[22]. Outdated hospital morgues, funeral homes and pole barns rarely meet these criteria.

Limited budgets:

Nationally, many coroners, including those in Indiana, lack the funding for technologies such as CT Scanners, Low Dose X-Ray Scanner (LODOX), Rapid DNA Analyzers and Live Print scanners, all of which are important tools in present-day medicolegal death investigations.

According to Dr. O'dell Owens, former president of the International Association of Coroners and Medical Examiners, "eighty-four percent of coroners say they want standards and certification, but they lack access to resources and training"[23].

Epidemics, pandemics, and mass casualty incidents:

An epidemic is a disease that affects a large number of people within a population or region. A pandemic is an epidemic that has spread to multiple populations and regions. The opioid epidemic began in the 1990s and continues to this day. In the last decade, nearly 500,000 deaths in the United States were attributed to an opioid overdose of which 4,000 were individuals from Indiana[24]. These deaths resulted in an unexpected increase in the number of medicolegal investigations, forensic autopsies, and requests for toxicology testing.

Indiana announced in March of 2020 the first COVID-19 case and the beginning of the pandemic. COVID-19 is responsible for the deaths of more than 13,000 Hoosiers and more than 600,000 Americans[25]. Of added concern, is that the highest rate of laboratory-acquired infections, such as COVID-19, is believed to be found among autopsy workers[22]. The COVID-19 outbreak necessitated the revisiting of protocols for the conduct of autopsies where COVID-19 is a possible factor. To protect these workers, some argue that moving forward new autopsy facilities should be built to function at Biosafety Level 3.

A mass casualty incident is defined as "an event that overwhelms the local health care system, where the number of casualties exceeds the local resources and capabilities in a short period of time."[26] On April 15, 2021, a mass shooting occurred at a FedEx facility in Indianapolis killing nine and injuring seven others. The impact of this event and others like it not only affect family members and the community, but it can also impact the coroner staff both emotionally and

physically due to nature of the work. A deputy coroner was quoted as saying, in reference to the shooting that "it was the most challenging thing that one of my senior staff had to do"[27]. These types of incidents have the potential to essentially overwhelm and close-down the normal day to day operation of a coroner's office.

Conclusions

Since the Model 1954 Postmortem Examinations Act was published, the medicolegal death investigation landscape in the United States has changed significantly as evidenced by the opioid epidemic, the COVID-19 pandemic, and an increase in the number of mass casualty incidents of a criminal nature. Today, county coroners in Indiana face the challenges posed by a scarcity of board-certified forensic pathologists and the lack of facilities suitable for properly conducting forensic autopsies. These deficiencies compromise the quality of medicolegal death investigations and potentially jeopardizes the public health and safety of the people of Indiana.

"While good people can often make a poor system function, it is far better to institutionalize an optimal system that can survive poor people"[28].

Options

1. Maintain the coroner system as it currently operates (county funded, independent contracts for pathology services and the use of facilities for autopsies). The annual recurring budget for this system is approximately **$18,000,000**. This equates to a per capita spending of **$2.73**.

2. Establish a Postmortem Examinations Commission to support the county coroners. The duties of the commission would include:
   a) the creation of an Office of the State Medical Examiner;
   b) oversight of the Office of the State Medical Examiner;
   c) the establishment of uniform standards for medicolegal death investigations;
   d) provide for forensic pathology services where needed;
   e) establish effective interagency avenues of communication; and
   f) identification or construction of facilities suitable for performing quality forensic autopsies.

3. Create a single centralized medical examiner office/laboratory in the Indianapolis area to provide medicolegal death investigation services statewide. The construction and staffing costs for centralized office and laboratory are as follows:
   a) new construction cost estimate $45,000,000;
   b) annual facility operating cost estimate $780,000;
   c) personnel costs for 80 staff members estimate $9,405,000; and
   d) annual recurring cost estimate **$10,185,000** (Appendix D).

   This option would require per capita spending of **$3.00**, which is an increase of **$0.27** over the per capita spending of **$2.73** for the current system.

4. Create five strategically located regional medical examiners offices/laboratories to provide medicolegal death investigation services. The construction and staffing costs for five regional medical examiner facilities are as follows:
   a) new construction cost estimate $62,000,000;
   b) annual operating costs estimate $1,073,000;
   c) personnel costs for 111 staff members estimate $10,136,000; and
   d) annual recurring cost of **$11,610,000** (Appendix D).

   This option would require per capita spending **$3.13**, which is an increase of **$0.40** over the per capita spending of **$2.73** for the current system.

NOTE: Cost estimates are projections based on conducting 6,000 autopsies per year.

Recommendations

1. Establish Postmortem Examination Commission as noted in Option 2 above to address the forensic pathologist shortage, the suitability of autopsy facilities and the standardization of medicolegal death investigations.

2. Adopt rules and procedures in compliance with the National Association of Medical Examiners Forensic Autopsy Performance Standards for circumstances requiring medical examiner investigation and autopsy (Appendix E).

3. Adopt rules and procedures in compliance with the American Board of Medicolegal Death Investigators recommendations (Appendix F).

4. Add age, education, and criminal history requirements for the position of county coroner.
5. Request that the Indiana Coroners Training Board complete a biennial survey of coroner office operational data.

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Appendix A

I.C. 10-11-11

PRINTING CODE. Amendments: Whenever an existing statute (or a section of the Indiana Constitution) is being amended, the text of the existing provision will appear in this style type, additions will appear in **this style type**, and deletions will appear in ~~this style type.~~

Additions: Whenever a new statutory provision is being enacted (or a new constitutional provision adopted), the text of the new provision will appear in **this style type**. Also, the word **NEW** will appear in that style type in the introductory clause of each SECTION that adds a new provision to the Indiana Code or the Indiana Constitution.

Conflict reconciliation: Text in a statute in *this style type* or ~~*this style type*~~ reconciles conflicts between statutes enacted by the 2018 Regular and Special Session of the General Assembly.

SENATE ENROLLED ACT No. 561

AN ACT to amend the Indiana Code concerning state offices and administration.

Be it enacted by the General Assembly of the State of Indiana:

SECTION 1. IC 10-11-11 IS ADDED TO THE INDIANA CODE AS A NEW CHAPTER TO READ AS FOLLOWS [EFFECTIVE JULY 1, 2019]:

Chapter 11. Office of Forensic Medical Studies

Sec. 1. As used in this chapter, "office" refers to the office of forensic medical studies.

Sec. 2. The office of forensic medical studies is established as a division of the state police department.

Sec. 3. (a) The superintendent of the state police department appointed under IC 10-11-2-6, in consultation with the Indiana State Coroners Association, Indiana Sheriff's Association, and the coroners training board (established by IC 4-23-6.5-3), shall study the need and the feasibility of a state medical examiner's office and, if established, which state agency would administer the office. The superintendent of the state police department, with the approval of the state police board established by IC 10-11-2-5, may appoint a physician licensed under IC 25-22.5 to assist with the study.

(b) In selecting the physician, the superintendent and the board shall give preference to a physician who is an Indiana resident and has been practicing medicine in Indiana for at least five (5) years, and:

(1) is certified in forensic pathology by the American Board of Pathology; or

(2) holds a subspecialty board certification in forensic pathology from the American Osteopathic Board of Pathology and the American Osteopathic Association.

Sec. 4. (a) If a physician is selected, the physician shall serve a two (2) year term as an employee or contractor of the state police department. During the two (2) year term, the physician shall assist the state police department in creating a comprehensive report. The report shall be presented to the state police superintendent, the state department of health, and the legislative council. The report must detail the findings of the state police department, or of the physician, if applicable, including:

(1) the need for a state medical examiner's office;

(2) various staffing models for the office;

(3) contracting options for assistant medical examiners;

(4) state forensic laboratory needs;

(5) contracting models for forensic laboratory facilities;

(6) certification and training standards for the state medical examiner and assistant examiners;

(7) accreditation considerations for the state medical examiner's office;

(8) under what circumstances the state medical examiner's office may be used; and

(9) under what circumstances the state medical examiner's office must be used.

(b) The report shall be:

(1) submitted on or before July 15, 2021; and

(2) in an electronic format under IC 5-14-6.

(c) The report may include any other information that the state police department or physician believes would be helpful.

SECTION 2. IC 36-2-14-6, AS AMENDED BY P.L.193-2018, SECTION 4, IS AMENDED TO READ AS FOLLOWS [EFFECTIVE JULY 1, 2019]: Sec. 6. (a) Whenever the coroner is notified that a person in the county:

(1) has died from violence;

(2) has died by casualty;

(3) has died when apparently in good health;

(4) has died in an apparently suspicious, unusual, or unnatural manner; or

(5) has been found dead;

the coroner shall, before the scene of the death is disturbed, notify a

law enforcement agency having jurisdiction in that area. The agency shall assist the coroner in conducting an investigation of how the person died and a medical investigation of the cause of death. The coroner may hold the remains of the decedent until the investigation of how the person died and the medical investigation of the cause of death are concluded.

(b) If the coroner reasonably suspects the cause of the person's death to be accidental or intentional overdose of a controlled substance (as defined by IC 35-48-1-9), the coroner shall do the following:

(1) Obtain any relevant information about the decedent maintained by the INSPECT program established by IC 25-1-13-4.

(2) Extract one (1) or more of the following bodily fluids from the decedent:

(A) Blood.

(B) Vitreous.

(C) Urine.

(3) Test a bodily fluid extracted under subdivision (2) to determine whether the bodily fluid contained any amount, including a trace amount, of a controlled substance at the time of the decedent's death.

(4) Report the results of the test conducted under this subsection to the state department of health after completing the medical investigation of the cause of the decedent's death.

(5) Provide the state department of health notice of the decedent's death, including any information related to the controlled substances involved, if any.

(c) The coroner:

(1) shall file a certificate of death with the county health department, or, if applicable, a multiple county health department, of the county in which the individual died, within seventy-two (72) hours after the completion of the death investigation;

(2) shall complete the certificate of death utilizing all verifiable information establishing the time and date of death; and

(3) may file a pending investigation certificate of death before completing the certificate of death, if necessary.

(d) If this section applies, the body and the scene of death may not be disturbed until:

(1) the coroner has photographed them in the manner that most fully discloses how the person died; and

(2) law enforcement and the coroner have finished their initial assessment of the scene of death.

However, a coroner or law enforcement officer may order a body to be moved before photographs are taken if the position or location of the body unduly interferes with activities carried on where the body is found, but the body may not be moved from the immediate area and must be moved without substantially destroying or altering the evidence present.

(e) When acting under this section, if the coroner considers it necessary to have an autopsy performed, is required to perform an autopsy under subsection (g), or is requested by the prosecuting attorney of the county to perform an autopsy, the coroner shall **arrange for the autopsy to be performed by a:**

(1) physician who:

(A) is certified by the American Board of Pathology; or

(B) holds a subspecialty board certification in forensic pathology from the American Osteopathic Board of Pathology and the American Osteopathic Association; or

(2) pathology resident acting under the direct supervision of a physician described in subdivision (1).

~~employ a:~~

~~(1) physician certified by the American Board of Pathology; or~~

~~(2) pathology resident acting under the direct supervision of a physician certified in anatomic pathology by the American Board of Pathology;~~

~~to perform the autopsy.~~

~~The~~ **A** physician ~~performing~~ **employed under subdivision (1) to perform** the autopsy shall be paid a fee of at least fifty dollars ($50) from the county treasury.

(f) If:

(1) at the request of:

(A) the decedent's spouse;

(B) a child of the decedent, if the decedent does not have a spouse;

(C) a parent of the decedent, if the decedent does not have a spouse or children;

(D) a brother or sister of the decedent, if the decedent does not have a spouse, children, or parents; or

(E) a grandparent of the decedent, if the decedent does not have a spouse, children, parents, brothers, or sisters;

(2) in any death, two (2) or more witnesses who corroborate the circumstances surrounding death are present; and

(3) two (2) physicians who are licensed to practice medicine in the state and who have made separate examinations of the

decedent certify the same cause of death in an affidavit within twenty-four (24) hours after death;

an autopsy need not be performed. The affidavits shall be filed with the circuit court clerk.

(g) A county coroner may not certify the cause of death in the case of the sudden and unexpected death of a child who is less than three (3) years old unless an autopsy is performed at county expense. However, a coroner may certify the cause of death of a child described in this subsection without the performance of an autopsy if subsection (f) applies to the death of the child.

(h) After consultation with the law enforcement agency investigating the death of a decedent, the coroner shall do the following:

(1) Inform a crematory authority if a person is barred under IC 23-14-31-26(c) from serving as the authorizing agent with respect to the cremation of the decedent's body because the coroner made the determination under IC 23-14-31-26(c)(2) in connection with the death of the decedent.

(2) Inform a cemetery owner if a person is barred under IC 23-14-55-2(c) from authorizing the disposition of the body or cremated remains of the decedent because the coroner made the determination under IC 23-14-55-2(c)(2) in connection with the death of the decedent.

(3) Inform a seller of prepaid services or merchandise if a person's contract is unenforceable under IC 30-2-13-23(b) because the coroner made the determination under IC 30-2-13-23(b)(4) in connection with the death of the decedent.

Appendix B

Stakeholder Surveys

Indiana State Police Department

Medical Examiner Feasibility Study

Coroner/Medical Examiner

1. In what geographic area of the State do you perform your duties?

2. What is the population of the area you serve?

3. What is your office's total annual budget? County or State funded?

4. Are there published salary tables for Pathologists and Morgue Technicians?

5. How do you calculate number of Morgue Assistants?

6. What percent of cases require histology?

7. How many cases should a histologist examine in a year?

8. Do you employ transcribers? How many? Ratio?

9. On average, how many forensic autopsies are performed annually in your county?

10. How long should a complete forensic autopsy take to complete?

11. How many Board-certified Forensic pathologists do you employ?

12. How much does a complete forensic autopsy cost your office?

13. Can you walk me through how a Coroners case requiring a forensic autopsy plays out?

14. How much does toxicology testing cost your office annually?

15. Do you require Board Certified Forensic Pathologist to perform your autopsies?

16. Does the pathologist have access to requisite medical equipment i.e., digital photography x-rays, CT scans etc.?

17. Do your pathologists performing forensic autopsies follow nationally recognized procedures? NAME Accredited?

18. Are your pathologists on call and available 24 hours a day?

19. What is turn -around time for typical Forensic autopsy?

20. How Is Evidence is documented, collected, and stored by your pathologists?

21. Do your pathologists respond to crime scenes when necessary?

22. What problem areas of the medical -legal system in your area, if any, need addressing?

23. Would a survey of all the county coroner's that included their staffing levels, salaries, annual budget, number of autopsies per year, cost per autopsy and annual toxicology costs be of benefit to you in developing your offices budget?

24. In support of Coroners, should the State establish, fund, and operate a Regional Medical Examiners System that would provide for accredited medical examiners facilities, standardized practices, as well as Board -Certified Forensic Pathologists for the purpose of conducting the highest quality forensic autopsies?

Indiana State Police Department

Medical Examiner Feasibility Study

Indiana Sheriffs Survey

1. In what geographic area of the state do you perform your duties?

2. What is the population of the county you serve?

3. Are forensic autopsies are performed in your county in a timely manner?

4. Are reports on the results of forensic autopsies are clear and concise?

5. Is there sufficient communication between the coroner, pathologist, and your office?

6. In what kind environment are forensic autopsies conducted in your county?

7. Does the pathologist document physical evidence in a proper manner?

8. Is the pathologist knowledgeable in evidence handling procedures?

9. Is the pathologist available for consultation?

10. Does the pathologist respond to crime scenes when requested?

11. In support of coroners, should the State of Indiana establish, fund, and operate a Regional Medical Examiners System that would provide for accredited medical examiner facilities, standardized practices as well as Board-Certified Forensic Pathologist for the purpose of conducting the highest quality forensic autopsies?

12. Comment Box

Medical Examiner Feasibility Study

Prosecuting Attorneys

1. In what geographic area of the State do you perform your duties?

2. What is the population of the county you serve?

3. Forensic autopsies are performed in a timely manner in your county.

4. An appropriate number of forensic autopsies are performed in your county.

5. How much funding does your office provide annually for the costs associated with a forensic autopsy in your county?

6. The reports issued by the pathologist are clear and understandable.

7. The pathologist is available for pre-trial consultation.

8. The pathologist testifies in a clear and objective manner.

9. Evidence is properly documented at forensic autopsies by your pathologist.

10. The pathologist performing autopsies should be a Board-Certified Forensic Pathologist.

11. The facilities used to perform forensic autopsies are conducive to the documentation and collection of physical evidence.

12. Forensic autopsies should be conducted following nationally recognized standards established by the National Association of Medical Examiners.

13. There is sufficient communication between you and the pathologist.

14. In support of coroners, the State of Indiana should establish, fund, and operate a Regional Medical Examiners System that would provide for accredited medical examiners facilities, standardized practices as well as Board -Certified Forensic Pathologists for the purpose of conducting the highest quality forensic autopsies.

Medical Examiner Feasibility Study

Crime Scene Investigators

1. In which geographic area of the state do you perform your duties?

2. On average how many autopsies do you attend annually?

3. How many autopsies are conducted out of state annually?

4. Forensic autopsies are conducted in a timely manner.

5. Autopsies are conducted by a Board-Certified Forensic Pathologist.

6. In what kind of environment are autopsies performed in your area?

7. The facilities where forensic autopsies are performed are conducive for the documenting and collecting of physical evidence.

8. Forensic autopsies are performed in a uniform manner throughout your area.

9. The coroner and/or pathologist are accessible for consultation.

10. The pathologist has sufficient knowledge in the collection and presentation of physical evidence.

11. The pathologist issues reports in a timely manner.

12. The pathologist completes thorough and competent forensic autopsies.

13. The pathologist has access to requisite equipment e.g., x-rays, CT scans etc.

14. The facilities where autopsies are performed are conducive for the documenting and collecting of physical evidence.

15. The pathologist comes to the scene when deemed appropriate.

16. In support of local coroners, the State of Indiana should establish, fund, and operate a Regional Medical Examiners System that would provide for accredited medical examiner facilities, standardized practices as well as Board-Certified Forensic Pathologists for the purpose of conducting the highest quality forensic autopsy.

Indiana State Police Department

Medical Examiner Feasibility Study

Practicing Forensic Pathologists

1. What attracted you to pursue a career to become a forensic pathologist?

2. Any thoughts on what might attract more interest in this field?

3. As a forensic pathologist, what are your biggest challenges?

4. In what counties do you perform forensic autopsies?

5. Do you have written contracts for the counties you serve?

6. How many complete forensic autopsies do you typically complete annually?

7. In state? Out of state?

8. What are your fees for conducting a complete forensic autopsy?

9. Do the facilities where you perform your autopsies charge you a fee?

10. How would you describe the environment (storage, lighting, ventilation etc.) where you conduct your autopsies?

11. Are these facilities equipped with the necessary equipment e.g., CT or LODOX?

12. What system(s) is in place to facilitate communication/consultation with other pathologists?

13. Should these facilities meet NAME accreditation standards?

14. Do you support the idea of the State establishing, funding, and operating a regionalized Medical Examiners System that would require for forensic autopsies the use of Board-Certified Forensic Pathologists and provide for NAME accredited medical facilities?

15. Are you aware of any medical facility within the State that has the capacity to serve as a regional Medical Examiner facility?

16. Should such a system be created would you be interested in a position?

17. Comments?

Medical Examiner Feasibility Study

Indiana Department of Toxicology

1. Describe your current working relationship with the Coroners throughout the State.

2. Describe your current working relationship practicing forensic pathologist in the State.

3. What type of testing does DOT perform for Coroners in Indiana?

4. Do you charge any fees to Coroners for testing forensic autopsy samples?

5. Industry wide, how much does a full panel of toxicology testing from forensic autopsies typically cost?

6. Are you able to break down on an annual basis each counties fee for DOT testing?

7. What are DOT's future plans for testing Coroner samples from forensic autopsies?

8. Would you need expanded facilities, staff, and equipment to perform complete testing?

9. What, if any, are your reporting requirements to DOH?

10. Would a state funded and operated regional medical examiners system be of benefit to the DOT?

11. How might this system be of value to the DOT?

12. Would it be of benefit to the DOT to be included in a statewide regional medical examiner's office expansion inclusive of toxicology capabilities?

13. Should the State of Indiana create a statewide regional medical examiners system? Why?

14. In your opinion, which State agency is best positioned to administer this system.

Medical Examiner Feasibility Study

Meeting Agenda

Location: Forensic and Health Sciences Laboratories

Date: June 1, 2021

Time: 1:00-2:00 pm

---

1. Introductions

2. Senate Enrolled Act 561

3. Study Progress Report

4. Discussion Topics

    a. What work related collaborations exist between the IDOH, Indiana Coroners and the Coroners Training Board?

    b. Should the Commission on Forensic Science as described in IC 4-23-6, enacted in 1959, be resurrected, possibly amended and funded to serve its original or similar purpose?

c. Should the State provide sufficient funding to staff and equip the Indiana Department of Toxicology to the extent that they are capable of testing coroner case samples from throughout the entire state?

d. Should the State of Indiana establish, fund, and operate a Regional Medical Examiners System that would provide for accredited medical examiner facilities, standardized practices, as well as Board Certified Forensic Pathologists for the purpose of conducting forensic autopsies?

e. From the ISDH perspective, what agency, commission, or entity is best suited to manage and oversee a statewide Medical Examiner System?

5. Closing

Death Investigation System

73 Responses 04:52 Average time to complete Closed Status

1. The death investigation protocols in Indiana are based on what system?

Medical Examiner	13
Coroner	22
Medical Examiner/Coroner Mix	31
None of the above	7

2. Who performs Forensic autopsies in Indiana?

Homicide Investigators	3
Coroners	36
Pathologists	26
None of the above	8

3. Where are autopsies performed?

Funeral Homes	1
Morgues	36
Hospitals	16
All of the above	20

4. Approximately how many forensic autopsies are performed annually in Indiana?

50	6
500	20
5,000	36
50,000	11

5. On average, how much does an autopsy cost?

$100	1
$500	3
$2,000	42
$5,000	27

6. What is the purpose of a forensic autopsy?

Determine next of kin	1
Determine cause of death	68
Determine guilt of suspect	3
None of the above	1

7. What are the requirements of becoming a Coroner?

High School Diploma	16
College Degree	18
Medical Degree	13
Pathology Speciality	16
None of the above	10

8. What are the typical requirements to be a Medical Examiner?

B.S. Degree	11
Medical Degree	22
Pathology Specialty	9
Forensic Fellowship	1
All of the above	30

9. In what circumstances are forensic autopsies normally performed?

On COVID-19 patients	0
On victims of unattended deat...	60
On cancer patients under doct...	1
All of the above	12

10. Coroner Offices are for the most part funded by?

Federal Taxes	5
State Income Taxes	21
State Excise Taxes	8
County Taxes	39

11. Should Indiana per capita spending on death investigations be on par with the national average?

Yes	63
No	10

12. Should the state fund the establishment of a Regional Medical Examiner's Office System that would provide consistent and competent services throughout the Indiana on an equal basis?

Yes	65
No	8

Appendix C

Commission on Forensic Sciences

IC 4-23-6

Chapter 6. Commission on Forensic Sciences

IC 4-23-6-1

Creation

Sec. 1. A commission is created which shall be known as the "commission on forensic sciences". It shall consist of five (5) members appointed by the governor; one (1) shall be a pathologist, one (1) shall be a person engaged in police work, one (1) shall be a coroner, and one (1) shall be a lawyer. The state health commissioner shall be the fifth member of the commission and shall serve as its secretary. In making the appointments, the governor may consult with, but shall not be bound by, the recommendation of organizations representing the categories of appointees. In the first instance one (1) of the members shall be appointed for a term of one (1) year, one (1) of the members shall be appointed for a term of two (2) years, one (1) of the members shall be appointed for a term of three (3) years, and one (1) of the members shall be appointed for a term of four (4) years. Each member shall serve until the member's successor is appointed and has qualified. Members of the commission may be removed by the governor for cause, and any vacancy shall be filled by appointment from the proper category and for the unexpired term. The members shall elect one (1) of their number to serve as chairperson for a period of one (1) year.

(Formerly: Acts 1959, c.361, s.1.) As amended by P.L.215-2016, SEC.91.

IC 4-23-6-2

Membership

Sec. 2. The membership of the commission shall be appointed not later than July 31, 1959, and the commission shall hold its organization meeting upon call of its secretary within ten (10) days after its members are appointed.

(Formerly: Acts 1959, c.361, s.2.) As amended by P.L.5-1984, SEC.182.

IC 4-23-6-3

Meetings; quorum; per diem and actual expenses

Sec. 3. The commission shall meet at least once in each two-month period. A majority shall constitute a quorum for the transaction of business and a per diem of ten dollars ($10) per day, and actual expenses incurred shall be allowed to each member for the member's attendance.

(Formerly: Acts 1959, c.361, s.3.) As amended by P.L.215-2016, SEC.92.

IC 4-23-6-4

Objectives

Sec. 4. The objectives of the commission shall be to promote in the state of Indiana scientific information and services in pathology, immunology, radiology, photography, psychiatry, dentistry, anthropology and other forensic sciences.
(Formerly: Acts 1959, c.361, s.4.)

IC 4-23-6-5
Powers

Sec. 5. (a) The powers of the commission shall be as follows:

(1) To establish and maintain a scientific laboratory for research and experimentation. The commission shall not duplicate adequate facilities for experimentation, research, or information which are available to the citizens of the state.

(2) To appoint an administrative director who shall be a physician and should be a pathologist certified by the American Board of Pathology and to select and appoint or accept the loan of other personnel as it deems necessary to carry out its purposes.

(3) To establish and maintain a system of records and to collect data pertinent to the objectives of the commission.

(4) To correlate information concerning forensic science facilities and make this information available to coroners, law enforcement officers, attorneys, and others.

(5) To contract from time to time for the services or opinion of experts in connection with a particular problem or a program of research.

(6) To engage in research and experimentation consistent with the objectives of the commission.

(7) To establish and maintain a forensic sciences library either alone or in cooperation with any other agency of the state, the use of which shall be available to any interested persons.

(8) To engage in and foster programs of information in forensic sciences for interested groups.

(9) To establish from time to time and to promulgate a schedule of reasonable fees and to collect the same for the services of the commission. The considerations in formulating a schedule shall be:

(A) uniformity;

(B) recovery of at least a portion of the cost of furnishing the major services of the commission; and

(C) availability of the services without burdensome expense to officers, agencies, and others in need of the services.

All money received by the commission under this subdivision shall be paid to the commission, which shall give a proper receipt for the same, and shall at the end of each month report to the auditor of state the total amount received by it under the provisions of this subsection, from all sources, and shall at the same time, deposit the entire amount of the receipts with the

treasurer of state, who shall place them to the credit of a special fund to be created and known as the forensic sciences commission laboratory expense fund. The commission shall, by its chairperson from time to time, certify to the auditor of state any necessary laboratory expenses incurred by the commission, and the auditor shall issue the auditor's warrant for the same, which shall be paid out of any funds collected and appropriated to the commission. Payments made by the auditor of state from the forensic sciences commission laboratory expense fund shall be limited so as not to exceed the amounts allotted from this fund by the budget committee.

(10) To accept gifts and grants of money, services, or property and to use the same for any given purpose consistent with the objectives of the commission.

(11) To use the services and facilities of the state department of health, state educational institutions, and hospitals and other agencies supported in whole or in part by public funds.

(12) To establish and maintain branch offices as it considers necessary.

(13) To cooperate with any state or local agency or with any hospital or postsecondary educational institution in any scientific program consistent with the objectives of the commission.

(Formerly: Acts 1959, c.361, s.5.) As amended by P.L.2-1992, SEC.39; P.L.2-2007, SEC.55; P.L.215-2016, SEC.93.

IC 4-23-6-6

Medical examiner system

Sec. 6. (a) The commission on forensic sciences shall promulgate and adopt rules in accordance with IC 4-22-2 to:

(1) create a medical examiner system to aid, assist, and complement the coroner in the performance of the coroner's duties by providing medical assistance in determining causes of death; and

(2) establish minimum and uniform standards of excellence, performance of duties, and maintenance of records to provide information to the state regarding causes of death for cases investigated.

The commission shall also adopt any other rules that are necessary to carry out the provisions of this section.

(b) The commission shall establish five (5) medical examiner districts within the state, taking into consideration population, geographical size of the area covered, availability of trained personnel, death rate by both natural and unnatural causes, and similar related factors. No county may be divided in the creation of a district.

(c) A district medical examiner shall be appointed by the commission for each district from nominees who are physicians

licensed to practice in Indiana. Nominees must reside in the district they are nominated for, and a preference shall be given to practicing physicians in pathology.

(d) The district medical examiner may appoint as many physicians as associate medical examiners as may be necessary to provide service within the district. The associate examiners shall be licensed to practice in Indiana with a preference to practicing pathologists.

(e) District and associate medical examiners may engage in the private practice of medicine or surgery in addition to their duties as medical examiners.

(f) The district and associate medical examiners shall, at the request of coroners in their districts:

(1) provide medical assistance in investigating deaths;

(2) provide or contract for laboratory facilities for performing autopsies and investigations;

(3) provide for the keeping of reports of all investigations and examinations; and

(4) provide other functions which may be specified in rules adopted by the commission.

(g) A district or associate medical examiner who performs a medical examination or autopsy under the direction of a coroner is immune from civil liability for performing the examination or autopsy.

As added by Acts 1981, P.L.39, SEC.1. Amended by P.L.215-2016, SEC.94.

Appendix D

Personnel, Construction and Operating Cost Projections

Medical Examiner Feasibility Study

Options Cost Summary

A. Centralized Medical Examiner Facility (1 Location)

1. # Of Employees = 80
2. Square Footage = 64,000sf
3. Construction Costs = $45,750,000
4. Personnel Costs = $9,405,500/Year
5. Operating Costs = $780,000/Year
6. Recurring Costs = $10,185,500/Year*

B. Regional Medical Examiner Facilities (5 Locations)

1. # Of Employees = 111
2. Square Footage = 88,000sf
3. Construction Costs = $66,187,500
4. Personnel Costs = $10,816,000/Year
5. Operating Costs = $1,100,000/Year
6. Recurring Costs = $11,196,000/Year*

*Consumables, training, equipment, supplies not included.

Medical Examiner Feasibility Study
Centralized ME Office-Staffing
(based 6,000 autopsies Per Year)

Personnel	Number	Salary	Subtotal
1. Chief Medical Examiner	1	$ 320,000	$ 320,000
2. Operations Manager	1	$ 120,000	$ 120,000
3. Deputy Chief Medical Examiner	1	$ 250,000	$ 250,000
4. Medical Examiners	22	$ 210,000	$ 4,620,000
5. Histologists	2	$ 50,000	$ 100,000
6. Autopsy Assistants	24	$ 40,000	$ 960,000
7. Transcriptionists	10	$ 35,000	$ 350,000
8. Administrative Assistant	1	$ 32,000	$ 32,000
9. Records Assistants	5	$ 30,000	$ 150,000
10. Receptionist	1	$ 28,000	$ 28,000
11. Legal Counsel	1	$ 100,000	$ 100,000
12. I.T.	1	$ 75,000	$ 75,000
13. H.R. Apecialist	1	$ 65,000	$ 65,000
14. Fiscal Administrator	1	$ 65,000	$ 65,000
15. Custodial Staff	2	*	*
16. Maintenance	2	*	*
17. Security Staff	4	*	*
	80	Subtotal =	$ 7,235,000
	(Plus Fringe benefits @ 30%) Total =		$ 9,405,500
18. M.D.I. Supervisors	5	$ 45,000.00	$ 225,000
19. M.D.I. Investigators	150	$ 40,000.00	$ 6,000,000
	(Plus Fringe benefits @ 30%) Total =		$ 8,092,500

* Included in annual operating costs

Medical Examiner Feasibility Study

Centralized ME Office

Construction Cost Estimate-HQ

1. Square footage (sf) estimate:	80 employees X 800 sf per employee =	64,000 sf *
2.Construction cost estimate:	64,000 sf X $625 per sf =	$40,000,000 **
3.Furniture, Fixtures, Equipment:	$40,000,000 X 10% =	$4,000,000***
4.Equipment (CT, Scopes etc.):	$750,000 =	$750,000
5.Technology Purchases:	$40,000,000 X 2.5% =	$1,000,000***
	Total Costs =	**$45,750,000**

*Forensic Science Laboratories, Handbook for Facility Planning, Forensic Science Laboratories Facilities Technical Working Group, NIST.

** McClaren, Wilson and Lawrie Associates, Russel McElroy, Interview March 2021

*** University of Houston, Furniture, Fixtures and Equipment Guidelines, Issued June 2012

Medical Examiner Feasibility Study
Regionalized ME Staffing-HQ
(based 6,000 autopsies Per Year)

Personnel	Number	Salary	Subtotal
1. Chief Medical Examiner	1	$ 320,000	$ 320,000
2. Operations Manager	1	$ 120,000	$ 120,000
3. Deputy Chief Medical Examiner	1	$ 250,000	$ 250,000
4. Medical Examiners	4	$ 210,000	$ 840,000
5. Histologists	2	$ 50,000	$ 100,000
6. Autopsy Assistants	6	$ 40,000	$ 240,000
7. Transcriptionists	3	$ 35,000	$ 105,000
8. Administrative Assistant	1	$ 32,000	$ 32,000
9. Records Assistants	2	$ 30,000	$ 60,000
10. Receptionist	1	$ 28,000	$ 28,000
11. Legal Counsel	1	$ 100,000	$ 100,000
12. I.T.	1	$ 75,000	$ 75,000
13. H.R. Apecialist	1	$ 65,000	$ 65,000
14. Fiscal Administrator	1	$ 65,000	$ 65,000
15. Custodial Staff	2	*	*
16. Maintenance	1	*	*
17. Security Staff	2	*	*
	31	Subtotal =	$ 2,400,000
		(Plus Fringe benefits @ 30%) Total =	$ 3,120,000

Medical Examiner Feasibility Study

Regionalized ME Office

Construction Cost Estimate-HQ

1. Square footage (sf) estimate:	31 employees X 800 sf per employee = 24,800 sf *	
2.Construction cost estimate:	24,800 sf X $625 per sf =	$15,500,000 **
3.Furniture, Fixtures, Equipment:	$15,500,000 X 10% =	$1,550,000***
4.Equipment (CT, Scopes etc.):	$750,000 =	$750,000
5.Technology Purchases:	$15,500,000 X 2.5% =	$387,500***
	Total Costs =	**$18,187,500**

*Forensic Science Laboratories, Handbook for Facility Planning, Forensic Science Laboratories Facilities Technical Working Group, NIST.

** McClaren, Wilson and Lawrie Associates, Russel McElroy, Interview March 2021

*** University of Houston, Furniture, Fixtures and Equipment Guidelines, Issued June 2012

Medical Examiner Feasibility Study
Regionalized (4) Staffing ME Facilities
(based 6,000 autopsies Per Year)

Personnel	Number	Salary	Subtotal
1. Deputy Chief Medical Examiner	1	$ 250,000	$ 250,000
2. Medical Examiners	4	$ 210,000	$ 840,000
3. Autopsy Assistants	5	$ 40,000	$ 200,000
4. Transcriptionists	2	$ 35,000	$ 70,000
5. Administrative Assistant	1	$ 32,000	$ 32,000
6. Records Assistants	2	$ 30,000	$ 60,000
7. Receptionist	1	$ 28,000	$ 28,000
8. Custodial Staff	1	*	*
9. Maintenance	1	*	*
10. Security Staff	2	*	*
	20	Subtotal =	$ 1,480,000
(Plus Fringe benefits @ 30%) Total =	$1,924,000 per facility X 4		$7,696,000

Medical Examiner Feasibility Study

Regional ME Offices

Construction Cost Estimate

1. Square footage (sf) estimate:	20 employees X 800 sf per employee = 16,000 sf *	
2.Construction cost estimate:	16,000 sf X $625 per sf =	$10,000,000 **
3.Furniture, Fixtures, Equipment:	$10,000,000 X 10% =	$1,000,000***
4.Equipment (CT, Scopes etc.):	$750,000 =	$750,000
5.Technology Purchases:	$10,000,000 X 2.5% =	$250,000***
	Total Costs =	**$12,000,000**

*Forensic Science Laboratories, Handbook for Facility Planning, Forensic Science Laboratories Facilities Technical Working Group, NIST.

** McClaren, Wilson and Lawrie Associates, Russel McElroy, Interview March 2021

*** University of Houston, Furniture, Fixtures and Equipment Guidelines, Issued June 2012

Medical Examiner Feasibility Study
ME Commission Staffing

Personnel	Number	Salary	Subtotal
1. Chief Medical Examiner	1	$ 320,000	$ 320,000
2. Deputy Chief Medical Examiner	1	$ 250,000	$ 250,000
3. Administrative Assistant	1	$ 32,000	$ 32,000
4. Records Assistant	1	$ 30,000	$ 30,000
5. Receptionists	1	$ 28,000	$ 28,000
6. Legal Counsel	1	$ 100,000	$ 100,000
7. I.T.	1	$ 75,000	$ 75,000
8. H.R. Specialist	1	$ 65,000	$ 65,000
9. Fiscal Administrator	1	$ 65,000	$ 65,000
	9	Subtotal =	$ 965,000

(Plus Fringe benefits @ 30%) Total = $1,257,100

Appendix E

NAME Standards

Forensic Autopsy Performance Standards

Prepared by:
Garry F. Peterson, M.D. (Committee Chair, 2005)
Steven C. Clark, Ph.D. (NAME Consultant)

Approved by General Membership
October 17, 2005 NAME Annual Meeting, Los Angeles, California
October 4, 2010 NAME Annual Meeting, Cleveland, Ohio
October 5, 2015 NAME Annual Meeting, Charlotte, North Carolina

Amendments Approved by General Membership
October 16, 2006 NAME Annual Meeting, San Antonio, Texas
August 11, 2011 NAME Annual Meeting, Ketchikan, Alaska
October 8, 2012 NAME Annual Meeting, Baltimore, Maryland
September 22, 2014 NAME Annual Meeting, Portland, Oregon
October 4, 2015 NAME Annual Meeting, Charlotte, North Carolina
September 12, 2016 NAME Annual Meeting, Minneapolis, Minnesota
September 25, 2020 (Online)

(Sunset date Annual Business Meeting in 2025)

The National Association of Medical Examiners 2020

Standards Committee

James R. Gill, M.D.
Chair

Officers

Sally S. Aiken, M.D.
President

James R. Gill, M.D.
Vice-President

Jonathan L. Arden, M.D.
Chair of the Board

Scott Denton, M.D.
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Contents

Preface

Efforts by the National Association of Medical Examiners (NAME) to promulgate practice standards began in the 1970s. These early efforts subsequently became focused on the operational aspects of medical examiner offices, resulting in the well-known NAME Office *Accreditation Checklist*. More recently, some members suggested that the time was ripe for standards that address the professional aspects of individual death investigations. Then-president Michael Bell appointed this committee to draft such standards.

The principal objective of these standards is to provide a constructive framework that defines the fundamental services rendered by a professional forensic pathologist practicing his or her art. Many forensic pathologists will exceed these minimal performance levels and are encouraged to do so.

NAME recognized that certain standards may not be applicable where they conflict with federal, state, and local laws. Deviation from these performance standards is expected only in unusual cases when justified by considered professional judgment.

National Association of Medical Examiners
Standards Committee
August 12, 2005

Committee and Panel Membership

NAME Standards Committee (2005)

Vernard I. Adams, M.D.
Michael D. Bell, M.D.
Vincent J. M. Di Maio, M.D.
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* Completed initial survey instruments - unable to attend meetings.
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Section A: Medicolegal Death Investigation

The purpose of this section is to define responsibility for medicolegal death investigation and to outline the types of cases that are to be investigated by such systems. Investigations can be conducted by inquiry with or without examination. Inquiries are typically conducted via telephone interview, personal interview, or review of records. Examination may include scene investigation, external inspection, and forensic autopsy.

Standard A1 Responsibilities

Medicolegal death investigation officers, be they appointed or elected, are charged by statute to investigate deaths deemed to be in the public interest--serving both the criminal justice, civil justice and public health systems. These officials must investigate cooperatively with, but independent from, law enforcement and prosecutors. The parallel investigation promotes neutral and objective medical assessment of the cause and manner of death.

To promote competent and objective death investigations:

A1.1 Medicolegal death investigation officers should operate without any undue influence from law enforcement agencies and prosecutors.

A1.2 A forensic pathologist or representative shall evaluate the circumstances surrounding all reported deaths.

Standard A2 Initial Inquiry

Medicolegal death investigators assess each death reported to the office to determine whether it falls under their jurisdiction as outlined by statutes, rules, and regulations. The categories below are those which should receive further investigations to protect the public safety and health, and determine the cause and manner of death.

The forensic pathologist or representative shall investigate all:

A2.1 deaths due to violence.
A2.2 known or suspected non-natural deaths.
A2.3 unexpected or unexplained deaths when in apparent good health.
A2.4 unexpected or unexplained deaths of infants and children.
A2.5 deaths occurring under unusual or suspicious circumstances.
A2.6 deaths of persons in custody.
A2.7 deaths known or suspected to be caused by diseases constituting a threat to public health.
A2.8 deaths of persons not under the care of a physician.

Section B: Forensic Autopsies

The purpose of this section is to establish minimum standards for the selection of cases requiring forensic autopsy, who should perform the autopsies, need for special dissection or testing, and who is responsible for interpretations and formation of opinions.

Standard B3 Selecting Deaths Requiring Forensic Autopsies

Medicolegal death investigation officers are appointed or elected to safeguard the public interest. Deaths by criminal violence, deaths of infants and children, and deaths in the custody of law enforcement agencies or governmental institutions-- can arouse public interest, raise questions, or engender mistrust of authority. Further, there are specific types of circumstances in which a forensic autopsy provides the best opportunity for competent investigation, including those needing identification of the deceased and cases involving bodies in water, charred or skeletonized bodies, intoxicants or poisonings, electrocutions, and fatal workplace injuries. Performing autopsies protects the public interest and provides the information necessary to address legal, public health, and public safety issues in each case. For categories other than those listed below, the decision to perform an autopsy involves professional discretion or is dictated by local guidelines. For the categories listed below, the public interest is so compelling that one must always assume that questions will arise that require information obtainable only by forensic autopsy.

The forensic pathologist shall perform a forensic autopsy when:

B3.1 the death is known or suspected to have been caused by apparent criminal violence.
B3.2 the death is unexpected and unexplained in an infant or child.
B3.3 the death is associated with police action.
B3.4 the death is apparently non-natural and in custody of a local, state, or federal institution.
B3.5 the death is due to acute workplace injury.*
B3.6 the death is caused by apparent electrocution.*
B3.7 the death is by apparent intoxication by alcohol, drugs, or poison, unless a significant interval has passed, and the medical findings and absence of trauma are well documented.
B3.8 the death is caused by unwitnessed or suspected drowning.*
B3.9 the body is unidentified and the autopsy may aid in identification.
B3.10 the body is skeletonized.
B3.11 the body is charred.
B3.12 the forensic pathologist deems a forensic autopsy is necessary to determine cause or manner of death, or document injuries/disease, or collect evidence.
B3.13 the deceased is involved in a motor vehicle incident and an autopsy is necessary to document injuries and/or determine the cause of death.

* unless sufficient antemortem medical evaluation has adequately documented findings and issues of concern that would otherwise have required autopsy performance.

Standard B4 Forensic Autopsy Performance

Performance of a forensic autopsy is the practice of medicine. Forensic autopsy performance includes the discretion to determine the need for additional dissection and laboratory tests. A forensic autopsy must be conducted by a licensed physician who is a forensic pathologist or by a physician who is a forensic pathologist-in-training (resident/fellow).* Responsibility for forensic autopsy quality must rest with the forensic pathologist, who must directly supervise support staff. Allowing non-forensic pathologists to conduct forensic autopsy procedures without direct supervision and guidance is fraught with the potential for serious errors and omissions.

Autopsies shall be performed as follows:

B4.1 the forensic pathologist or residents in pathology perform all autopsies.
B4.2 the forensic pathologist directly supervises all assistance rendered during postmortem examinations.
B4.3 the forensic pathologist or residents in pathology performs all dissections of removed organs.
B4.4 the forensic pathologist determines need for special dissections or additional testing.
B4.5 the forensic pathologist shall not perform more than 325 autopsies in a year. Recommended maximum number of autopsies is 250 per year.

Standard B5 Interpretation and Opinions

Interpretations and opinions must be formulated only after consideration of available information and only after all necessary information has been obtained.

Autopsies shall be performed as follows:

B5.1 the forensic pathologist reviews and interprets all laboratory results the forensic pathologist requested.
B5.2 the forensic pathologist reviews all ancillary and consultative reports the forensic pathologist requested.
B5.3 the forensic pathologist reviews the investigative reports, medical records, medications (where applicable), and scene imagery that the forensic pathologist deems relevant in his/her professional opinion.
B5.4 the forensic pathologist determines cause of death.

* Elsewhere in these standards, where the word "pathologist" appears, it means a physician who is a pathologist or a pathologist-in-training (resident/fellow), as defined by the ACGME.

Section C: Identification

The purpose of this section is to establish procedures for sufficient identification of the deceased, to document information needed to answer questions that may later arise, and to archive information needed for putative identification before burial of unidentified remains.

Standard C7 Standard Identification Procedures

Methods of identification are determined on an individual case basis, but can include viewing of the remains, either directly or by photograph, and comparison of dentition, fingerprints, or radiographs. A photograph of the face, labeled with the case number, documents and preserves the appearance at the time of identification. The same photograph can also be used to minimize and prevent potential errors when multiple fatality incidents occur. When more traditional methods fail in the determination of identification, a routinely-obtained DNA sample may be used to link the remains either to a known antemortem or kindred sample. In addition, a DNA specimen is particularly important for later questions of identity as well as for potential familial genetic analysis and criminalistic comparisons. Preservation of all data used to determine identification is necessary to address future questions and can provide the opportunity for a second objective determination of identification.

In support of identification of the body:

C7.1 the forensic pathologist assesses the sufficiency of presumptive identification.
C7.2 the forensic pathologist or representative takes identification photographs with case number in photograph.
C7.3 the forensic pathologist or representative obtains and archives specimen for DNA on all autopsied cases.

Standard C8 Procedures Prior to Disposition of Unidentified Bodies

Prior to disposition of the unidentified remains, inventory and archiving of potentially useful objective data are required. A forensic autopsy can disclose medical conditions useful for identification. Full-body radiographs document skeletal characteristics and radio-opaque foreign bodies such as bullets, pacemakers, and artificial joints. Dental charting and radiography preserve unique dental characteristics. The documentation of a decedent's clothing and personal effects archives details that are familiar to the next-of-kin. Careful preservation and archiving provide an objective basis for future identification and thereby avoid the need for exhumation.

Prior to disposition of an unidentified body the forensic pathologist shall:

C8.1 perform a forensic autopsy.
C8.2 take or cause to be taken radiographs of head, neck, chest, extremities, and torso in their entirety.
C8.3 cause the dentition to be charted and x-rayed.
C8.4 document or cause to be documented decedent's clothing and personal effects.

Section D: External Examinations: General Procedures

The purpose of this section is to establish minimum standards for the external examination of all bodies.

Standard D9 Preliminary Procedures

These standards underscore the need for assessment of all available information prior to the forensic autopsy to (1) direct the performance of the forensic autopsy, (2) answer specific questions unique to the circumstances of the case, (3) document evidence, the initial external appearance of the body, and its clothing and property items, and (4) correlate alterations in these items with injury patterns on the body. Just as a surgeon does not operate without first preparing a history and physical examination, so must the forensic pathologist ascertain enough history and circumstances and may need to inspect the body to decide whether a forensic autopsy is indicated and to direct the forensic autopsy toward relevant case questions.

Preliminary procedures are as follows:

D9.1 forensic pathologist reviews the circumstances of death prior to forensic autopsy.
D9.2 forensic pathologist or representative measures and records body length.
D9.3 forensic pathologist or representative measures and records body weight.
D9.4 forensic pathologist examines the external aspects of the body before internal examination.
D9.5 forensic pathologist or representative photographs, or forensic pathologist describes decedent as presented.
D9.6 forensic pathologist documents and correlates clothing findings with injuries of the body in criminal cases.
D9.7 forensic pathologist or representative identifies and collects trace evidence on clothing in criminal cases.
D9.8 forensic pathologist or representative removes clothing.
D9.9 forensic pathologist or representative photographs or lists clothing and personal effects.

Standard D10 Physical Characteristics

The external examination documents identifying features, signs of or absence of disease and trauma, and signs of death. Recording identifying features provides evidence for or against a putative identification. Recording signs of disease and trauma is a primary purpose of the forensic autopsy.

The forensic pathologist shall:

D10.1 document apparent age.
D10.2 establish sex.
D10.3 document or describe apparent race or racial characteristics.
D10.4 describe hair.
D10.5 describe eyes.
D10.6 describe abnormal body habitus.
D10.7 document prominent scars, tattoos, skin lesions, and amputations.
D10.8 document presence or absence of dentition.
D10.9 inspect and describe head, neck, thorax, abdomen, extremities, and hands.
D10.10 inspect and describe posterior body surface and genitals.
D10.11 document evidence of medical or surgical intervention.

Standard D11 Postmortem Changes

Recording *livor mortis* helps to answer later questions about bruises and body position. Notation of postmortem artifacts is useful for interpretation of subsequent forensic autopsy findings. Each of these may be useful in estimation of the postmortem interval.
The forensic pathologist shall:

D11.1 describe *livor mortis.*
D11.2 describe postmortem changes.
D11.3 describe evidence of embalming.
D11.4 describe decompositional changes.
D11.5 describe rigor mortis.

Section E: External Examinations: Specific Procedures

The purpose of this section is to establish minimum standards for external examination of bodies with documentation of injuries or suspected sexual assault.

Standard E12 Suspected Sexual Assault

Collection of swabs, combings, clippings, and trace evidence may be necessary to 1) determine if sexual assault occurred; 2) link multiple, apparently unrelated deaths; or 3) link the death to an assailant. DNA analysis is now the test of choice on swabs, hair, and fingernail clippings. These collections shall be performed in accordance with the requirements of the crime laboratory procedures.

The forensic pathologist or representative shall, prior to cleaning the body:

E12.1 collect swabs of oral, vaginal, and rectal cavities.
E12.2 collect pubic hair combings or tape lifts.
E12.3 collect fingernail scrapings or clippings.
E12.4 collect pubic and head hair exemplars.
E12.5 identify and preserve foreign hairs, fibers, and biological stains.

Standard E13 Injuries: General

Documentation of injuries may be necessary to determine the nature of the object used to inflict the wounds, how the injuries were incurred, and whether the injuries were a result of an accident, homicide, or suicide. Written, diagrammatic, and photographic documentation of the injuries may be used in court. Observations and findings are documented to support or refute interpretations, to provide evidence for court, and to serve as a record.

The forensic pathologist shall:

E13.1 describe injuries.
E13.2 describe injury by type.
E13.3 describe injury by location.
E13.4 describe injury by size.
E13.5 describe injury by shape.
E13.6 describe injury by pattern.

Standard E14 Photographic Documentation

Photographic documentation complements written documentation of wounds and creates a permanent record of forensic autopsy details. Photographic documentation of major wounds and injury shall include a reference scale in at least one photograph of the wound or injury to allow for 1:1 reproduction.

The forensic pathologist or representative shall:

E14.1 photograph injuries unobstructed by blood, foreign matter, or clothing.
E14.2 photograph major injuries with a scale.

Standard E15 Firearm Injuries

Documentation of firearm wounds as listed below should include detail sufficient to provide meaningful information to users of the forensic autopsy report, and to permit another forensic pathologist to draw independent conclusions based on the documentation.

The forensic pathologist shall:

E15.1 describe injuries.
E15.2 measure wound size.
E15.3 locate cutaneous wounds of the head, neck, torso, or lower extremities by measuring from either the top of head or sole of foot.
E15.4 locate cutaneous wounds of the head, neck, torso, or lower extremities by measuring from either the anterior or posterior midline.
E15.5 locate cutaneous wounds of the upper extremities by measuring from anatomic landmarks.
E15.6 descriptively locate cutaneous wounds in an anatomic region.
E15.7 describe presence or absence of soot and stippling.
E15.8 describe presence of abrasion ring, searing, muzzle imprint, lacerations.

Standard E16 Sharp Force Injuries

Documentation of sharp force injuries as listed below should include detail sufficient to provide meaningful information to users of the forensic autopsy report, and to permit another forensic pathologist to draw independent conclusions based on the documentation.

The forensic pathologist shall:

E16.1 describe wound.
E16.2 measure wound size.
E16.3 locate wound in anatomic region.
E16.4 estimate depth of wound
E16.5 determine organs and structures involved
E16.6 estimate direction of stab wound tracks

Standard E17 Burn Injuries

Documentation of burn injuries as listed below should include detail sufficient to provide meaningful information to users of the forensic autopsy report, and to permit another forensic pathologist to draw independent conclusions based on the documentation.

The forensic pathologist shall:

E17.1 describe appearance of burn.
E17.2 describe distribution of burn.

Standard E18 Patterned Injuries

Documentation of patterned injuries as listed below should include detail sufficient to provide meaningful information to users of the forensic autopsy report, and to permit another forensic pathologist to draw independent conclusions based on the documentation. Bite marks should be swabbed to collect specimens to use for DNA comparison with putative assailants.

The forensic pathologist shall:

E18.1 measure injury size.
E18.2 describe location of injury.
E18.3 describe injury pattern.
E18.4 swab recent or fresh bite mark.

Section F: Internal Examination

The purpose of this section is to establish minimum standards for internal examinations.*

Standard F19 Thoracic and Abdominal Cavities

Because some findings are only ascertained by *in situ* inspection, the thoracic and abdominal cavities must be examined before and after the removal of organs so as to identify signs of disease, injury, and therapy.

The forensic pathologist shall:

F19.1 examine internal organs *in situ.*
F19.2 describe adhesions and abnormal fluids.
F19.3 document abnormal position of medical devices.
F19.4 describe evidence of surgery.

Standard F20 Internal Organs and Viscera

The major internal organs and viscera must be examined after their removal from the body so as to identify signs of disease, injury, and therapy.

Procedures are as follows:

F20.1 the forensic pathologist or representative removes organs from cranial, thoracic, abdominal, and pelvic cavities.
F20.2 the forensic pathologist or representative records measured weights of brain, heart, lungs, liver, spleen, and kidneys.
F20.3 the forensic pathologist dissects and describes organs.

*** The Committee recognizes that some circumstances may justify a "limited" internal examination, in which case the rationale for such shall be documented**

Standard F21 Head

Because some findings are only ascertained by *in situ* inspection, the scalp and cranial contents must be examined before and after the removal of the brain so as to identify signs of disease, injury, and therapy.

Procedures are as follows:

F21.1 the forensic pathologist shall inspect and describe scalp, skull, and meninges.
F21.2 the forensic pathologist shall document any epidural, subdural, or subarachnoid hemorrhage.
F21.3 the forensic pathologist shall inspect the brain *in situ* prior to removal and sectioning.
F21.4 the forensic pathologist shall document purulent material and abnormal fluids.
F21.5 the forensic pathologist or representative removes the dura mater and the forensic pathologist inspects the skull.

Standard F22 Neck

The muscles, soft tissues, airways, and vascular structures of the anterior neck must be examined to identify signs of disease, injury, and therapy. A layer-by-layer dissection is necessary for proper evaluation of trauma to the anterior neck. Removal and *ex situ* dissection of the upper airway, pharynx, and upper esophagus is a necessary component of this evaluation. A dissection of the posterior neck is necessary when occult neck injury is suspected.

The forensic pathologist shall:

F22.1 examine *in situ* muscles and soft tissues of the anterior neck.
F22.2 ensure proper removal of neck organs and airways.
F22.3 examine neck organs and airways.
F22.4 dissect the posterior neck in cases of suspected occult neck injury.
F22.5 perform anterior neck dissection in neck trauma cases.

Standard F23 Penetrating Injuries, Including Gunshot and Sharp Force Injuries

Documentation of penetrating injuries as listed below should include detail sufficient to provide meaningful information to users of the forensic autopsy report, and to permit another forensic pathologist to draw independent conclusions based on the documentation. The recovery and documentation of foreign bodies is important for evidentiary purposes. Internal wound pathway(s) shall be described according to organs and tissues and size of defects of these organs and tissues.

The forensic pathologist shall:

F23.1 correlate internal injury to external injury
F23.2 describe and document the track of wound
F23.3 describe and document the direction of wound
F23.4 recover foreign bodies of evidentiary value
F23.5 describe and document recovered foreign body

Standard F24 Blunt Impact Injuries

Documentation of blunt impact injuries as listed below should include detail sufficient to provide meaningful information to users of the forensic autopsy report, and to permit another forensic pathologist to draw independent conclusions based on the documentation.

The forensic pathologist shall:

F24.1 describe internal and external injuries with appropriate correlations.
F24.2 describe and document injuries to skeletal system.
F24.3 describe and document injuries to internal organs, structures, and soft tissue.

Section G: Ancillary Tests and Support Services

The purpose of this section is to establish minimum standards for the use of scientific tests, procedures, and support services. This section also addresses the need for certain equipment and access to consultants. For toxicology reports, it also specifies the report content needed by the forensic pathologist for interpretation and establishes minimum standards for handling and documenting evidence.

Standard G25 Radiography

Radiographs of infants are required to detect occult fractures which may be the only physical evidence of abuse. Radiographs detect and locate foreign bodies and projectiles. Charred remains have lost external evidence of penetrating injury and identifying features.

The forensic pathologist or representative shall:

G25.1 X-ray all infants.
G25.2 X-ray explosion victims.
G25.3 X-ray gunshot victims.
G25.4 X-ray charred remains.
G25.5 X-ray remains when decomposition obscures or causes loss of identifying features and/or evidence of trauma.

Standard G26 Specimens for Laboratory Testing

Specimens must be routinely collected, labeled, and preserved to be available for needed laboratory tests, and so that results of any testing will be valid. The blood specimen source should be documented for proper interpretation of results. Blood or other appropriate samples should be collected, whenever possible, for potential genetic testing in sudden, unexplained deaths that remain unexplained at the completion of the autopsy.

The forensic pathologist or representative shall:

G26.1 collect blood, urine, and vitreous.
G26.2 collect, package, label, and preserve biological samples.
G26.3 document whether blood is central, peripheral, or from cavity.

Standard G27 Histological Examination

Histological examination may reveal pathologic changes related to the cause of death.

The forensic pathologist shall:

G27.1 perform histological examination in cases having no reasonable explanation of the cause of death following gross autopsy performance, scene/circumstance evaluation, and toxicology examination, unless the remains are skeletonized or severely decomposed.

Standard G28 Forensic Pathologists' Access to Scientific Services and Equipment

The forensic pathologist requires access to special scientific services, equipment, and expertise. Radiographs, body weights, and organ weights are needed for evaluation of pathologic processes. These procedures need to be available during the forensic autopsy. Also, it is not reasonable, practical, or safe to carry bodies or organs to other locations for weighing or imaging.

The forensic pathologist shall have access to:

G28.1 a histology laboratory.
G28.2 a radiologist.
G28.3 a forensic anthropologist.
G28.4 a forensic odontologist.
G28.5 toxicology testing.
G28.6 on-site radiographic equipment.
G28.7 on-site body and organ scales.
G28.8 a clinical chemistry lab.
G28.9 a microbiology lab.

Standard G29 Content of Toxicology Lab Report

For correct interpretation, understanding, and follow-up of toxicology reports, the forensic pathologist requires specific knowledge of the items listed below.

The forensic pathologist shall require the toxicologist or the toxicology report to provide the:

G29.1 source of sample.
G29.2 type of screen.
G29.3 test results.
G29.4 method of analysis.

Standard G30 Evidence Processing

Custodial maintenance and chain of custody are legally required elements for documenting the handling of evidence.

The forensic pathologist or representative shall:

G30.1 collect, package, label, and preserve all evidentiary items.
G30.2 document chain of custody of all evidentiary items.

Section H: Documentation and Reports

The purpose of this section includes standards for the content and format of the postmortem record.

Standard H31 Postmortem Examination Report

Postmortem inspection and forensic autopsy reports must be readable, descriptive of findings, and include interpretations and opinions to make them informative. The report typically includes two separate parts of the forensic pathologist's work product, (1) the objective forensic autopsy with its findings including toxicological tests, special tests, microscopic examination, etc., and (2) the interpretations of the forensic pathologist.

The forensic pathologist shall:

H31.1 prepare a written narrative report for each postmortem examination.
H31.2 include the date, place, and time of examination.
H31.3 include the name of deceased, if known.
H31.4 include the case number.
H31.5 include observations of the external examination, and when performed, the internal examination.
H31.6 include a separate section on injuries.
H31.7 include a description of internal and external injuries.
H31.8 include descriptions of findings in sufficient detail to support diagnoses, opinions, and conclusions.
H31.9 include a list of the diagnoses and interpretations in forensic autopsy reports.
H31.10 include cause of death.
H31.11 include the name and title of each forensic pathologist.
H31.12 sign and date each postmortem examination report.

Terms and Definitions

1. Autopsy

An examination and dissection of a dead body by a physician for the purpose of determining the cause, mechanism, or manner of death, or the seat of disease, confirming the clinical diagnosis, obtaining specimens for specialized testing, retrieving physical evidence, identifying the deceased or educating medical professionals and students.

2. Cause of Death

The underlying disease or injury responsible for setting in motion a series of physiologic events culminating in death.

3. Direct Supervision

Supervision of personnel performing actions in the immediate presence of the supervisor.

4. Forensic Autopsy

An autopsy performed pursuant to statute, by or under the order of a medical examiner or coroner.

5. Forensic Pathologist

A physician who is certified in forensic pathology by the American Board of Pathology or who, prior to 2006, has completed a training program in forensic pathology that is accredited by the Accreditation Council on Graduate Medical Education or its international equivalent or has been officially "qualified for examination" in forensic pathology by the ABP.

6. Manner of Death

A simple system for classifying deaths based in large part on the presence or absence of intent to harm, and the presence or absence of violence, the purpose of which is to guide vital statistics nosologists to the correct external causation code in the International Classification of Diseases. The choices are natural, accident, homicide, suicide, undetermined, and in some registration districts for vital statistics, unclassified.

7. Medicolegal Death Investigator

An individual who is employed by a medicolegal death investigation system to conduct investigations into the circumstances of deaths in a jurisdiction.

8. Forensic Pathologist's "Representative"

Any individual who carries out duties under the direction or authority of the forensic pathologist. Individuals performing these various duties may range from technicians to licensed physician medical examiners, and may be law enforcement or crime laboratory technicians.

Appendix F

IACME Standards

A. Medicolegal Office Practices

1. Professional Membership

a. One member of the medicolegal staff shall be a member in good standing with the IAC&ME. Yes No

b. The Chief Medicolegal officer (Coroner or Medical Examiner) should be a member in good standing with the IAC&ME. Yes No N/A

2. Office Contact Information

a. The coroner/medical examiner office (C/ME) telephone number shall be published in the local/regional phone book. Yes No

b. The C/ME contact information should be posted and labeled on the county website. Yes No N/A

c. The office should have a "general" email address. Yes No N/A

d. The primary C/ME staff members should have office email addresses. Yes No N/A

3. Office Space and Equipment

a. The office should provide workspace for all administrative employees. Yes No N/A

b. The office should provide workspace for all investigative employees. Yes No N/A

c. The office should provide workspace for all forensic employees. Yes No N/A

d. The office should provide workspace for all morgue employees. Yes No N/A

e. The office should have access to gathering space for office functions (i.e., training, break rooms, restrooms, etc.). Yes No N/A

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f. The office should have workspace for meeting with families. Yes No N/A

g. The office shall provide enough general storage space so that items are not stacked in hallways or open areas. Yes No

h. The office shall provide lockable storage space separate from public areas. Yes No

i. Computers, fax/copy machines, and phones should be available to staff. Yes No N/A

j. Administrative staff shall be provided enough equipment to handle the daily caseload. Yes No

k. Investigative staff shall be provided enough equipment to handle the daily caseload. Yes No

l. The office should have high-speed Internet access. Yes No N/A

m. The office shall have a written policy covering Internet use and password protection. Yes No

4. Office Space Security and Safety

a. The facility shall have a security system in place. Yes No

b. Access to the office shall be controlled and limited for both the staff and the public. Yes No

c. A building diagram should be posted with evacuation routes shown. Yes No N/A

d. Administrative and morgue areas shall be separated by sealed doors. Yes No

e. First aid kit should be mounted, visible and accessible to office staff. Yes No N/A

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f. Work areas should be maintained in a safe and appropriate manner. Yes No N/A

g. The office shall provide 24-hour locked storage for evidence and property. Yes No

h. Case files shall be in a secured, lockable location. Yes No

i. Lighting in all work areas shall be appropriate. Yes No

j. A preventative maintenance program for the facility should be in place (e.g. HVAC, electrical and mechanical). Yes No N/A

k. Heating, ventilation and air conditioning system shall be appropriate for the size of the office and caseload. Yes No

l. The office should have a routine maintenance or cleaning schedule and contract (bonded agency). Yes No N/A

5. Office Policy and Procedures

a. The office shall have a policy/procedure manual that contains appropriate standards of internal operating procedures or guidelines. Yes No

b. The office shall have a policy/procedure manual accessible to staff members. Yes No

c. The office policy/procedure manual shall include currently applicable C/ME statutes. Yes No

d. The office should make available the County/Office Human Resources guidelines. Yes No N/A

e. The office shall have a written policy for reporting probable contagious diseases to Public Health Agencies. Yes No

f. The office shall have written policy for handling religious/ cultural sensitivity and autopsy objections. Yes No

g. The office shall have written policy regarding media contact. Yes No

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h. The office shall have an established policy/ procedure describing which cases receive partial autopsies. Yes No

i. The office shall have an established policy/ procedure describing which cases receive complete autopsies. Yes No

6. Records, Property Storage, Release and Retrieval Policies and Procedures

a. The office shall have written policy covering record storage, maintenance, retrieval, and security. Yes No

b. Record storage space shall be secure, with controlled access. Yes No

c. The office should maintain retrievable records for data analysis for a minimum of 5 years. Yes No N/A

d. The office shall have written policy describing property/ evidence collection, inventory, and disposition. Yes No

e. The office shall have written documentation created and maintained on all deaths reported to the office. Yes No

f. Verify that the office creates and maintains records on all investigations that occur within the jurisdiction. Yes No

g. All case reports should describe how case jurisdiction (acceptance or declining of a case) was determined. Yes No N/A

h. The office shall maintain a case numbering system that tracks case reports, receiving, examination and release of the body. Yes No

i. The office shall maintain enough storage space to store 5 years worth of records in the office. Yes No

j. The office shall have written policy regarding case tracking, caseloads and completion times (including all reports). Yes No

k. The office shall have written policy regarding chain of custody. Yes No

l. The office shall have written policy regarding confidentiality. Yes No

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m. The office shall have written policy regarding release of information. Yes No

n. The office shall have written policy regarding release of photographs. Yes No

o. The office shall have written policy regarding release of documents. Yes No

p. The office shall have written policy regarding prescription drug handling, secured storage, and disposition. Yes No

q. The office shall have written policy regarding illicit drug handling, secured storage, and disposition. Yes No

r. The office shall have written policy regarding the handling, secured storage, and disposition of money. Yes No

s. The office should have a written policy regarding the collection and storage of specimens for DNA analysis. Yes No N/A

7. Annual Reporting

a. The office shall prepare an annual report with both descriptive and statistical data. Yes No

b. The annual report should contain a narrative description of jurisdiction served, population and C/ME statutes. Yes No N/A

c. The annual report should contain a narrative description of office goals and objectives. Yes No N/A

d. The annual report should contain the number of deaths reported to the office. Yes No N/A

e. The annual report should contain the number of cases accepted by the office. Yes No N/A

f. The annual report should contain the number of cases by manners of death. Yes No N/A

g. The annual report should contain the number of cases by "general" cause of death (within each MOD category). Yes No N/A

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h. The annual report should contain the number of cases receiving scene investigation by C/ME investigator.	Yes No N/A
i. The annual report should contain the number of bodies transported by the office.	Yes No N/A
j. The annual report should contain the number of bodies transported to the office.	Yes No N/A
k. The annual report should contain the number of external examinations performed.	Yes No N/A
l. The annual report should contain the number of partial autopsies performed.	Yes No N/A
m. The annual report should contain the number of full autopsies performed.	Yes No N/A
n. The annual report should contain the number of hospital autopsies under C/ME jurisdiction.	Yes No N/A
o. The annual report should contain the number of cases where toxicology was performed.	Yes No N/A
p. The annual report should contain the number of unidentified bodies.	Yes No N/A
q. The annual report should contain the number of organ and tissue referrals and donations made to the organ procurement organization (OPO).	Yes No N/A
r. The annual report should contain the number of unclaimed bodies.	Yes No N/A
s. The annual report should contain the number of exhumations by the C/ME.	Yes No N/A
t. The annual report should contain a data table of categories of cause and manner of death.	Yes No N/A
u. The annual report should be available to the public (i.e., published on the state/county website).	Yes No N/A

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8. Quality Assurance Policies

a. The office should have written policy regarding office performance improvement.	Yes No N/A
b. The office should have written policy regarding office quality assurance.	Yes No N/A
c. The office should have written policy regarding case reviews.	Yes No N/A
d. The office should have written policy regarding report reviews (investigative and autopsy).	Yes No N/A
e. The office shall have a standard method/system to keep track of case status (e.g., complete/ incomplete cases).	Yes No
f. The office should have a targeted time-line for case report completion	Yes No N/A
g. The office should participate in national/state data collection efforts (e.g., violent death.). reporting, child fatality review, in-custody deaths, etc	Yes No N/A
h. The office shall contact OSHA or Consumer Product Safety when appropriate cases arise.	Yes No
i. The agency's policy/procedure manual shall require criminal background checks for all new employees.	Yes No
j. The office should have written policy for reviewing unidentified cases.	Yes No N/A
k. The office shall have written policy for determining case jurisdiction.	Yes No
l. The office shall enter unidentified decedents into NamUs.	Yes No
m. The office should work with law enforcement to report unidentified decedent data for NCIC.	Yes No N/A
n. The office shall have written policy regarding notifying NOK.	Yes No
o. The office shall have written policy regarding decedent identification methods.	Yes No

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p. The office should participate in local or state level child fatality review teams. Yes No N/A

q. The office should participate in local or state level elder death review teams. Yes No N/A

r. The office should participate in local or state level domestic fatality review teams. Yes No N/A

s. The office shall complete death certificates consistent with CDC guidelines. Yes No

9. Public Service

a. The office should perform public education when requested by schools, clubs, hospitals, etc.. Yes No N/A

b. The office should participate in education programs for law enforcement, EMS and fire agencies. Yes No N/A

c. The office should have a website or webpage. Yes No N/A

10. Organ and Tissue Donation

a. The office shall have written policy regarding organ and tissue procurement. Yes No

b. The office should cooperate with organ and tissue procurement organizations. Yes No N/A

c. The office should keep statistics on organ and tissue donation cases. Yes No N/A

11. Mass Fatality Planning

a. The office shall implement a comprehensive disaster preparedness/mass fatality plan that is reviewed annually. Yes No

b. The office should have an MOU or Interagency Agreements for the access of needed equipment in the event of a mass fatality. Yes No N/A

c. The chief/lead investigator shall be certified in the minimum Incident Command System courses offered by FEMA. Yes No

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d. The office should participate in mass disaster drills, table top exercises and functional drills annually. Yes No N/A

e. The office should coordinate with surrounding jurisdictions regarding mass fatality planning. Yes No N/A

f. Contact information should be readily available for pertinent officials and offices in case of a mass fatality incident. Yes No N/A

g. The office mass fatality plan should address the collection of data for missing persons reports (call center). Yes No N/A

h. The office should have a mass fatality case management process (e.g. manual or electronic). Yes No N/A

i. The jurisdiction should have a protocol for a family assistance center which includes the C/ME office. Yes No N/A

12. Employee Safety and Training

a. The office shall have written policy to ensure compliance with government safety standards. Yes No

b. The office shall have written policy regarding exposure to biohazards. Yes No

c. The office shall document employee training. Yes No

d. The county/office shall conduct new employee orientation training. Yes No

e. The office should have an employee training program. Yes No N/A

f. The office should keep records of required staff vaccinations (e.g., Hepatitis B vaccinations accepted or refused). Yes No N/A

g. The office shall have a documented "field training" program for new investigators. Yes No

h. The "chief/lead investigator" shall be registered by the American Board of Medicolegal Death Investigators (ABMDI) or its equivalent. Yes No

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i. The majority of the C/ME investigators should be registered by the American Board of Medicolegal Death Investigators (ABMDI) or its equivalent.	Yes	No	N/A
j. The office shall require investigative staff to receive formal continuing education (CE).	Yes	No	

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B. Investigative Practices

1. Investigations

a. The office shall have written policy covering case notification, acceptance of, and declining of cases.	Yes No
b. The office shall have established scene investigation policies/procedures.	Yes No
c. An investigator should be available 24hrs a day to respond to calls for service and scene investigation.	Yes No N/A
d. A staff member shall be available 24hrs a day to field calls for investigative services.	Yes No
e. The office shall have an established policy regarding infant death investigations (birth to 1 year - SUIDI Form).	Yes No
f. The office should have an established policy regarding death investigations of children.	Yes No N/A
g. The office should have an established policy regarding the communication with NOK in cases of sudden unexplained pediatric deaths.	Yes No N/A
h. The office should have written policy regarding personal communication of final certification findings in cases of sudden unexplained pediatric deaths.	Yes No N/A
i. The office should have written policy regarding memorial keepsakes in sudden unexplained pediatric deaths.	Yes No N/A
j. The office should have written policy regarding NOK interaction (holding, touching, etc.) in cases of non-suspicious pediatric deaths.	Yes No N/A
k. Doll re-enactments should be performed on all sudden unexplained infant deaths (when possible).	Yes No N/A
l. Run sheets from emergency medical technicians, ED records, and hospital charts shall be available to the investigator.	Yes No
m. The office shall have written policy regarding formal pronouncement or field declaration of death.	Yes No
n. The office shall have written policy regarding the transfer of case information across shifts or supervisors.	Yes No

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o. Paper bags shall be used to secure hands on suspected homicide cases and suspicious deaths when indicated. Yes No

p. Body bags should be secured and/or sealed on all jurisdictional deaths by the scene investigator (as appropriate). Yes No N/A

q. The office shall have a written policy regarding communication of investigative findings with law enforcement agencies. Yes No

r. Postmortem observations shall be performed and documented by the scene investigator. Yes No

s. The office shall have written policy regarding the documentation, collection, transport, storage and disposition of money from the scene. Yes No

t. The office shall have written policy regarding the documentation, collection, transport, storage and disposition of prescriptions medications from the scene. Yes No

u. The office shall have written policy regarding the documentation, collection, transport, storage and disposition of illicit drugs from the scene. Yes No

2. Identification

a. The office shall have written policy covering identification procedures. Yes No

b. The office shall have written policy regarding the use of fingerprints, DNA, radiological or dental documentation to establish positive identification. Yes No

c. The office shall have written policy regarding allowing family members or friends to make positive visual identification. Yes No

d. The office shall have a case body numbering system in place for labeling all bodies. Yes No

e. The "method" of decedent identification shall be recorded. Yes No

f. The office shall require a signed statement of identification by the individual performing the identification. Yes No

g. The source of identification (i.e., government identification, license, etc.) shall be recorded and retained in case file. Yes No

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h. The office shall have written policy describing case types where fingerprints, dental exams, body x-rays, anthropology, or DNA analysis experts should be used. Yes No

i. The office shall have access to conduct fingerprint comparison. Yes No

j. The office shall have access to conduct dental examination. Yes No

k. The office shall have access to conduct body x-rays. Yes No

l. The office shall have access to forensic anthropology. Yes No

m. The office shall have access to forensic serology and DNA analysis. Yes No

n. Prior to disposition of unidentified bodies, the office shall perform the following tasks in order to permit potential future identification: fingerprint the body; photograph the body; examine and chart the dentition; take x-rays; store specimens for DNA and enter the data into NamUs. Yes No

o. The office shall establish scientific identification on all homicides (if possible). Yes No

3. Written Documentation

a. The office shall complete a comprehensive written investigative report on all jurisdictional cases. Yes No

b. A written report will be generated on all reportable cases (i.e. hospice deaths and nursing home deaths). Yes No

c. The office shall have a written policy requiring investigators to document initial history of the fatal event, the essential facts and circumstances of the case, decedent "histories" (when appropriate), and make a record of any witness accounts. Yes No

d. The office shall have a written policy requiring significant circumstantial and physical observations to be noted and recorded regarding the time of death; including the presence, location, and degree of rigor; the location, fixation, and color of postmortem livor; and, when indicated, the temperature of the body. Yes No

e. The investigative scene reports should be available to the Forensic Pathologist before autopsy. Yes No N/A

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f. Cause and manner of death should be recorded in the autopsy and/or investigative report, consistent with what is stated on the death certificate. Yes No N/A

g. Copies of the death certificate should be included in the case file and retrievable (digital or paper). Yes No N/A

h. Medical records should be obtained on all jurisdictional cases (when necessary). Yes No N/A

i. The office should have written policy regarding written record retention. Yes No N/A

j. The office should routinely obtain copies of first responder's reports (e.g., EMS, Fire, Police, witnesses). Yes No N/A

k. The office shall conduct an independent investigation separate from Law Enforcement or other investigative entities. Yes No

l. Investigative reports shall include 911 call time, office contact time, and scene arrival/departure times. Yes No

m. The office shall document the notification of next of kin (who, where, when). Yes No

4. Photographic Documentation

a. The office shall have written policy regarding the use, security, and storage of case photographs. Yes No

b. Photographic media shall be secured and retrievable by case number. Yes No

c. Investigative scene photographs should be available to the Forensic Pathologist before autopsy. Yes No N/A

d. The office shall have written policy requiring investigators to obtain scene photographs. Yes No

e. Close-up (identification) photographs shall be taken of all decedents. Yes No

f. Intermediate (orientation) photographs shall be taken at all scenes (e.g., to establish body condition/clothing and position in relation to the overall scene). Yes No

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g. Distant photographs shall be taken at all scenes (e.g., to document the environment).	Yes No
h. The office shall take photographs with and without scales in those cases when no frame of reference is present.	Yes No
i. The office shall have written policy regarding digital media storage and back-up schedule (off-site storage).	Yes No
j. The office should have written policy regarding photograph retention.	Yes No N/A

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C. Morgue Facilities

1. Body Handling and Transport

a. The office shall have written policy for identifying decedents/remains for transport. Yes No

b. The office shall have written policy regarding the release of personal effects from the body at the scene. Yes No

c. The office shall have written policy regarding body handling safety, including biohazard precautions. Yes No

d. Bodies/bags shall be appropriately tagged and secured prior to transport (for chain of custody). Yes No

e. Body bags will be utilized in all cases that fall under the jurisdiction of the office. Yes No

f. Body transport vehicles shall be clean and properly maintained (regardless of who owns them). Yes No

g. Body transport stretchers shall be in good working condition and cleaned on a regular basis (regardless of who owns them). Yes No

h. Removal of a body (from scene and vehicles) shall be handled in a dignified manner. Yes No

i. The investigator shall control the body (at the scene) until removal in all cases that fall under the jurisdiction of the office. Yes No

2. Body Receiving Area

a. The office shall have written policy regarding the receiving and releasing of bodies. Yes No

b. The body receiving and handling area should be protected from public view. Yes No N/A

c. The body receiving area shall be of adequate size to accommodate the caseload. Yes No

d. All surface areas, floors, and walls in the body receiving area shall be clean. Yes No

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e. Body scales should be available and operable. Yes No N/A

f. Body scale should be calibrated and maintained consistent with manufacturer specifications. Yes No N/A

g. Body stretchers and carts shall be maintained and in good working condition. Yes No

h. The body receiving area shall be secured. Yes No

3. Refrigeration

a. The refrigerated storage shall be accessible to the autopsy and body receiving areas. Yes No

b. The refrigerated storage space shall be sufficient to maintain a normal caseload. Yes No

c. Temperature gauges shall be operable and checked regularly by staff. Yes No

d. Temperatures should be recorded/logged on a schedule by C/ME staff. Yes No N/A

e. Separate refrigerated storage should be available for decomposed bodies. Yes No N/A

4. Autopsy Facility

a. The office shall have written morgue policies available in the autopsy area. Yes No

b. The autopsy facility should be accredited by a recognized accrediting agency (i.e., IACME, JACO, NAME). Yes No N/A

c. Staff changing areas should be provided with showers for both male and female employees. Yes No N/A

d. Areas used for dissection (autopsy tables, body carts, etc.) shall be maintained and in good operating condition. Yes No

e. Organ scales, scientific equipment, suction and other pieces of equipment shall be calibrated and maintained. Yes No

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f. First aid kits, safety showers and eyewashes shall be available and in good working order. Yes No

g. Ventilation system(s) shall adequately control odors. Yes No

h. Appropriate personal protective devices including face protection, chest and arm protection, gloves, shoe covers, and N95 respirators and/or PAPRS shall be available to staff. Yes No

i. The autopsy area shall be clean, with adequate lighting, cooling and heating. Yes No

j. The autopsy surfaces shall be routinely cleaned and sanitized. Yes No

k. Adequate space and equipment for tissue cutting and histology preparation shall be available. Yes No

l. A space shall be designated for tissue storage, and a method utilized to control odors. Yes No

m. The autopsy area shall be able to accommodate normal and peak case load; including the typical number of autopsies or external examinations, the standard complement of autopsy and laboratory personnel, and official participants or observers from cooperating agencies. Yes No

n. Material Safety Data Sheets (MSDS) sheets shall be posted in areas where chemicals are stored. Yes No

o. Safety showers, eye washes, and first aid kits shall be located in the autopsy area. Yes No

p. A building diagram shall be posted with evacuation routes clearly noted. Yes No

q. All biological samples shall be stored in an appropriate, well- ventilated, safe location. Yes No

5. Forensic Autopsy Procedures

a. The office shall have written policy covering postmortem examination procedures. Yes No

b. The office shall have written policy specifying the criteria for determination of when complete autopsies, partial autopsies, or external examinations are to be performed. Yes No

c. The office should have written policy covering evidence collection. Yes No N/A

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d. The office should have written policy covering tissue and body fluid specimen collection.	Yes No N/A
e. The office should have written policy covering evidence and specimen disposition and destruction.	Yes No N/A
f. The circumstances of death shall be reviewed prior to autopsy (if known).	Yes No
g. Fingerprints or DNA cards should be taken on all cases (if possible).	Yes No N/A
h. Fingerprints, dental examinations, body x-rays, forensic anthropology or forensic serology, and DNA analysis shall be performed on all unidentified cases (if possible).	Yes No
i. Body x-rays should be taken on all cases (if possible).	Yes No N/A
j. Dental examinations, forensic anthropology or forensic serology, and DNA analysis should be performed on all cases (if appropriate).	Yes No N/A
k. All collected specimens shall be labeled and logged with the case number, name, date and time of collection.	Yes No
l. The office shall have written policy regarding chain of custody utilized in the capturing of all biological specimens.	Yes No
m. Autopsy photographs shall be taken to record the examination.	Yes No
n. Identification (close-up) photographs shall be taken, labeled, and saved for all cases.	Yes No
o. Autopsies shall be performed in greater than 95% of suspected homicides at the time of death.	Yes No
p. Autopsies shall be performed in greater than 95% of all cases in which the manner of death is undetermined at the time an autopsy decision is made.	Yes No
q. A forensic pathologist shall personally examine all external aspects of the body before dissection.	Yes No
r. A forensic pathologist should be responsible to perform each postmortem examination, the diagnoses made, the opinions formed, and any subsequent opinion testimony.	Yes No N/A
s. All autopsy ex-situ dissections should be personally performed by a forensic pathologist.	Yes No N/A

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t. All pathology assistants, autopsy technicians, dieners, or others without medical training, shall work in the physical presence of and under the direct supervision of a forensic pathologist. Yes No

u. Specimens should be routinely retained for toxicological and histological examination during autopsies. Yes No N/A

v. The office shall have written policy covering the retention and disposition of organ and tissue specimens taken at autopsy, that addresses whether, or under what circumstances, next-of-kin are to be notified of each retention. Yes No

w. Samples should be routinely obtained for potential DNA analysis. Yes No N/A

x. Autopsy tissue and fluid specimens should be individually collected, adequately packaged, properly labeled, appropriately preserved, and archived using a consistent and logical specimen numbering system. Yes No N/A

y. Specimen containers should be labeled with the case number and the date collected, the type of contents, the name of the deceased; the name of the responsible physician, and the name of the person securing the specimen. Yes No N/A

z. Specimens collected for microbiological evaluation should be placed into appropriate transport media or sterile containers. Yes No N/A

aa. Microbiologic specimens should be promptly transported to the service laboratory. Yes No N/A

6. Forensic Autopsy Procedures (suspected sexual assault)

a. Sexual assault kits shall be available and specimens collected when necessary. Yes No

b. Control hair samples should be collected from the decedent by plucking a representative number of hairs from various body areas, e.g., scalp and pubic areas. Yes No N/A

c. In cases of suspected sexual contact the pubic area should be lightly combed to obtain loose and foreign hairs, and native control hairs plucked and packaged separately. Yes No N/A

d. In cases of suspected sexual contact, swabbing of body orifices should be obtained and examined for the presence of spermatozoa, the presence of seminal fluid, and DNA and/or serologic markers. Yes No N/A

e. In cases of suspected sexual contact, bite marks should be processed according to procedures consistent with forensic Odontology practice (ABFO). Yes No N/A

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D. Laboratory Services

1. Radiologic Services

a. The office shall have access to radiographic equipment.	Yes	No	
b. The radiographic equipment should be in a convenient location near the autopsy room.	Yes	No	N/A
c. The radiographic equipment shall be shielded in accordance with radiation safety standards.	Yes	No	
d. The radiographic equipment and x-ray viewing devices shall be available to the Forensic Pathologist.	Yes	No	
e. Radiographic equipment shall be operational and personnel properly trained to operate it.	Yes	No	
f. Exposure tags (dosimeters) shall be mandatory for all personnel working in the immediate area of radiographic equipment.	Yes	No	

2. Toxicology Laboratory Services

a. The C/ME office shall have access to a forensic toxicology laboratory.	Yes	No	
b. The toxicology laboratory shall be accredited by the American Board of Forensic Toxicology (ABFT).	Yes	No	
c. A toxicology laboratory report shall be issued for each case that receives analysis.	Yes	No	
d. The office shall have written policy regarding the collection and storage of toxicology specimens.	Yes	No	
e. The histology services should be performed by a certified laboratory.	Yes	No	N/A
f. The office shall have written policy describing criteria for toxicology orders.	Yes	No	
g. The office should maintain statistics regarding toxicology turnaround times.	Yes	No	N/A

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h. 90% of all toxicology examinations are completed within 90 calendar days of case submission. Yes No

i. 90% of all toxicology examinations are completed within 60 calendar days of case submission. Yes No N/A

3. Crime Laboratory Services

a. The office should have written policy covering the crime laboratory's roles and responsibilities. Yes No N/A

b. Laboratory services should be available to perform fingerprinting, serologic and/or DNA testing, ballistics, and trace evidence examination. Yes No N/A

c. The crime laboratory shall be accredited by the American Society of Crime Laboratory Directors Laboratory Accreditation Board (ASCLD-LAB). Yes No

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E. Forensic Specialists

1. Forensic Pathologists

a. The forensic autopsies shall be performed by board-certified forensic pathologists (ABP).	Yes	No	
b. The forensic pathologist(s) shall be licensed to practice medicine in the state in which they practice.	Yes	No	
c. The licensure of the forensic pathologist(s) shall be verified annually.	Yes	No	
d. An autopsy report shall be prepared on each case autopsied.	Yes	No	
e. 90% of all autopsy reports are completed within 90 calendar days of autopsy performance.	Yes	No	
f. 90% of all autopsy reports are completed within 60 calendar days of autopsy performance.	Yes	No	N/A
g. Medical staff shall be of sufficient size so that no forensic pathologist is required to perform more than 325 autopsies/year (total by pathologist, inside AND outside cases included).	Yes	No	
h. Medical staff should be of sufficient size so that no forensic pathologist is required to perform more than 250 autopsies/year (total by pathologist, inside AND outside cases included).	Yes	No	N/A
i. The office should have written policy regarding contracting with additional forensic pathologists (as needed).	Yes	No	N/A

2. Other Forensic Specialists

a. The office should have written policy covering forensic specialist support services.	Yes	No	N/A
b. The office should have written policy describing cases which require contacting forensic specialists.	Yes	No	N/A
c. The office should be affiliated with a board-certified forensic odontologist (ABFO).	Yes	No	N/A
d. The office should be affiliated with a board-certified forensic anthropologist (ABFA).	Yes	No	N/A

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e. The office shall have access to other forensic specialists (i.e. botany, radiology, neuropathology, entomology, etc.). Yes No

f. Forensic specialists should be certified by an accredited agency/association (i.e. FSAB accredited). Yes No N/A

g. Forensic specialists shall be required to submit a written report. Yes No

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Appendix G

Forensic Needs - IMCFSA

Medical Examiners Feasibility Study

Forensic Laboratories Report

Indianapolis-Marion County Forensic Services Agency

(I-MCFSA)

Background: The Indianapolis-Marion County Forensic Services Agency (I-MCFSA) was established by a City/County Ordinance in 1985 and is under the leadership and direction of the Marion County Forensic Services Board. The I-MCFSA mandate is to provide Forensic Science services to the Criminal Justice System of Marion County.

The I-MCFSA is comprised of six units within the agency that include Administration, Quality Assurance, Biology, Chemistry, Criminalistics and Crime Scene Investigation. Normally, the agency receives an increase in the number of cases submitted. In 2019 the I-MCFSA received 13,851 cases and processed 14,384. The following year, the agency accepted 12,801 submissions and completed 11,374 cases. The decrease in number of submissions was directly related to COVID-19 restrictions.

The annual budget for the agency's 2020 fiscal year was $8,703,000.

Requisite Needs: As the number of submissions continue to grow, so does the number and types of items submitted. To meet the growing demand for service, the agency needs additional staffing. Currently, the agency occupies lab space in three different locations. These locations lack sufficient space for any additional staffing and do not provide for improvement with regards to a more efficient workflow.

The Expedited NIBIN Program is a critically important and effective tool in the investigation of violent cases involving the use of firearms. Since its inception, it has seen a 228% increase in the daily demand for service thus adding additional pressure to current staffing levels and available space.

The agency is in the process of completing a facility needs assessment. In addressing the need for additional space, the Mayor's Office has announced the appropriation of funding for a capital improvements plan for the purpose of modernizing the I-MCFSA facilities.

From a scientific/technical perspective, the agency is planning to expand its capabilities in interpreting complex mixtures of DNA through the use of a Probabilistic Genotyping Program. The acquisition, validation and implementation of this program and anticipated increase in demand for service will require additional funding.

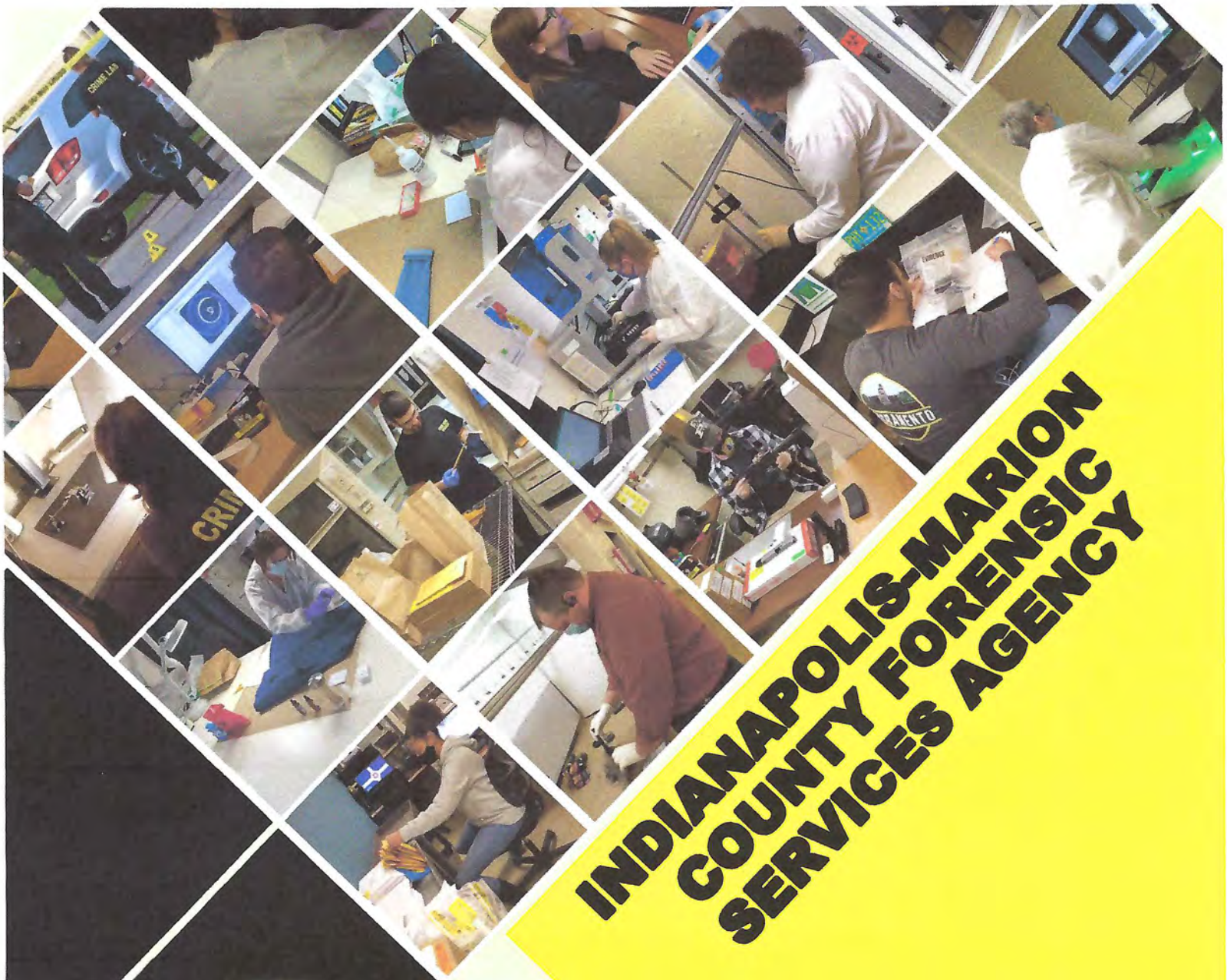
The costs associated with this important new technology may be available through grant funding.

Accreditation/ Certification: The I-MCFSA was originally accredited by the American Society of Crime Lab Directors/ Laboratory Accreditation Board in 2001.The agency is currently accredited by the ANSI National Accreditation Board (ANAB) to ISO 17025:2017, ANAB Forensic Supplemental AR 3125 and FBI Quality Assurance Standards for Forensic DNA Testing and Combined DNA Index System (CODIS).

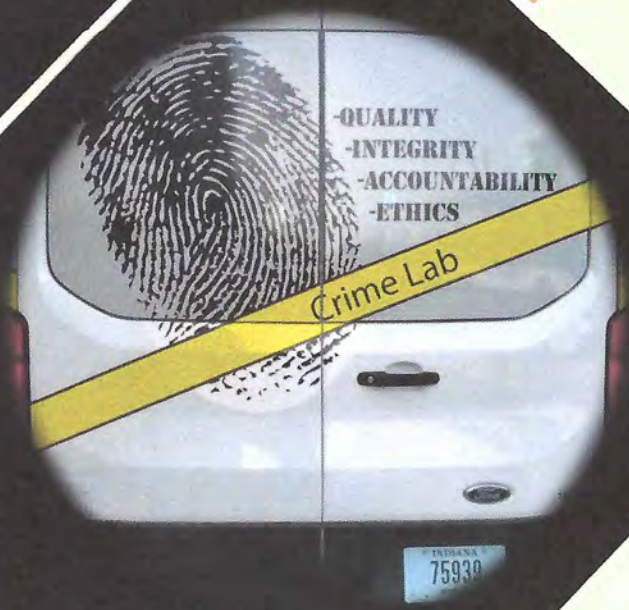
Of special note, the I-MCFSA Crime Scene Investigation (CSI) Unit was the first CSI Unit in the nation to become nationally accredited.

Several agency staff members are individually certified by a variety of organizations that include the Indiana Law Enforcement Academy, International Association for Identification, Association of Firearms and Toolmarks Examiners, American Board of Criminalistics, American Board of Forensic Document Examiners, and the Indiana State Bar Association.

Annual Report: See attached.



INDIANAPOLIS-MARION COUNTY FORENSIC SERVICES AGENCY



2020 ANNUAL REPORT

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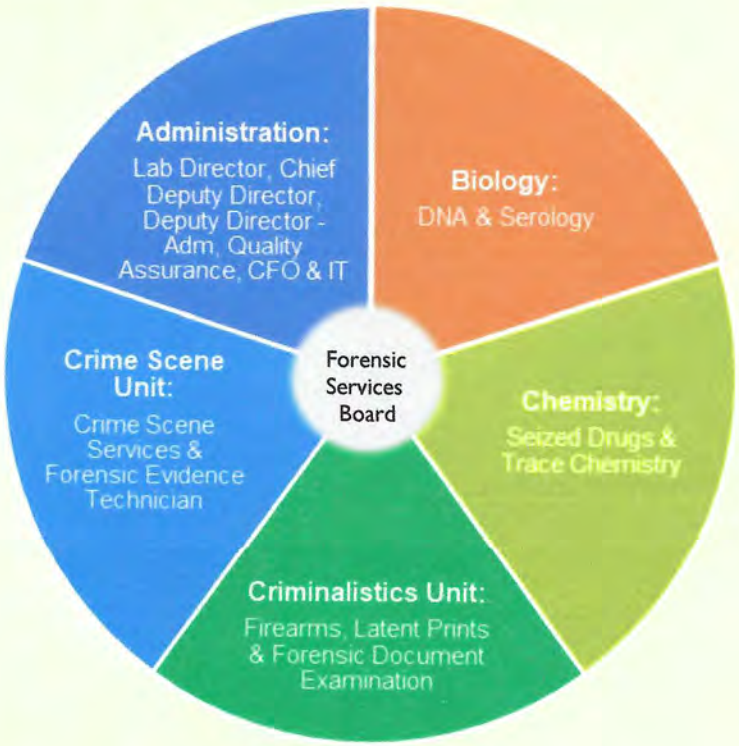
MISSION STATEMENT

The mission of the Indianapolis-Marion County Forensic Services Agency (I-MCFSA) is to provide forensic services to the Marion County Community by supporting the needs of the Criminal Justice System. The forensic services provided shall be built on a foundation of quality, integrity, accountability and ethics. All I-MCFSA personnel shall strive to meet forensic needs of today and into the future in all their work endeavors.



"If the law has made you a witness, remain a man of science. You have no victim to avenge, no guilty or innocent person to convict or save – you must bear testimony within the limits of science."

Dr. P.C.H. Brouardel
French Pathologist

2020 Forensic Services Board

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Board Chairman
Indianapolis Metropolitan Police Department Chief

Kerry J. Forestal
Marion County Sheriff

Julie Voorhies
Marion County Auditor

Ryan Mears
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Lee Sloan, MD
Board Secretary
Marion County Coroner

Robert Hill
Marion County
Chief Public Defender

James Roth
Mayoral Appointee

Louis Profeta, MD
City-County Council Appointee

We are grateful for the dedication and wisdom of our Forensic Services Board. In spite of their busy lives, filled with other responsibilities, they selflessly gave of their time to serve in 2020. We also acknowledge the following individuals for the same commitment:
Chief Deputy Reginald (Reggie) Roney, Marion County Sheriff's Department (Proxy for Sheriff Forestal);
Cindy Oetjen, Deputy Prosecuting Attorney (Proxy for Prosecutor Mears);
Alfie Ballew, Chief Deputy Coroner (Proxy for Coroner Sloan);
Ray Casanova, Chief Of Trial Deputy (Proxy for Public Defender Hill) and
Attorney David Lichtenberger, Office of Corporation Counsel.

Brenda L. Keller, Laboratory Director

The Indianapolis-Marion County Forensic Services Agency (I-MCFSA) was created by City/County ordinance in 1985. Since that time, we became accredited and maintained ANAB (ISO 17025:2017) accreditation. During 2020, the Indianapolis-Marion County Forensic Services Agency received 12,801 cases and completed 11,374 cases for the criminal justice agencies within Marion County. To no surprise, the laboratory's benchmark of six (6) weeks turn-around time for all casework completion has shown significant increases in turn-around times as the pandemic swept across the nation. We are hoping that 2021 will see significant improvements towards the elusive goal. Even with the hiring of additional personnel to fill vacant positions, the crime rate for homicides realized an all-time high at 245 cases in 2020, putting strain on employees and resources.

The laboratory was ordered to "stay at home" on March 23, 2020 by the Mayor of Indianapolis, as well as the Governor of Indiana, however, our essential personnel in the Crime Scene Unit remained fully operational throughout the order. The remainder of the laboratory followed the order initially, but was forced to return to work to meet the needs of the Criminal Justice System and the citizens of Marion County. Though the laboratory didn't return to a full work schedule until July, critical needs were met by the staff working alternating days. As the staff returned to work full time, to meet social distancing requirements, the employees returned to split shift schedules where half of the employees work early morning, and the other half reports to work in the afternoon. As this split shift schedule was deemed necessary, the conditions it imposed were not ideal for staff communication. However, I am confident we shall persevere as we continue to focus on the words "quality, integrity, accountability, and ethics" from the laboratory's mission statement. The I-MCFSA personnel commit themselves to these core values, and were able to accomplish major throughput, as evidenced by the number of completed cases in 2020, regardless of the difficulties faced due to COVID-19.

While 2020 threw the laboratory more than a few curve balls, the staff managed to knock them out of the park with their unrelenting commitment to the lab's mission and core values. On behalf of our dedicated employees at the I-MCFSA, it has been a pleasure working for the good of Marion County and we look forward to continued success of the lab in 2021.

Brenda L. Keller
Laboratory Director
Indianapolis-Marion County Forensic Services Agency

Forensic Service Built on a Foundation of Quality, Integrity, Accountability, and Ethics

Overview

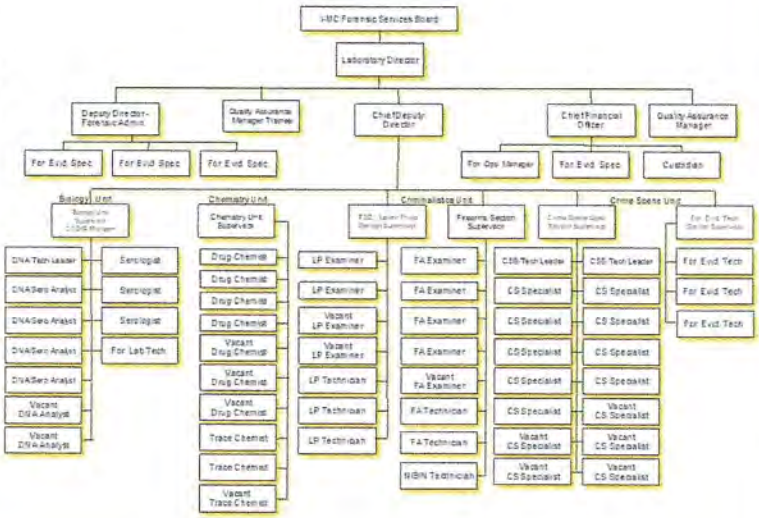
The I-MCFSA (Crime Lab) began operations in 1986, providing services to all law enforcement agencies in Marion County. The Crime Lab provides scientific testing on items of evidence recovered in criminal cases by its own Crime Scene Specialists at various crime scenes, Forensic Evidence Technicians working in the Marion County Coroner's Office , and any other law enforcement personnel processing crime scenes that occurred within Marion County. Forensic analysis is conducted in the fields of Biology (DNA and Serology), Seized Drugs, Blood Alcohol and Fire Debris, Firearms and NIBIN, Latent Prints, Forensic Document Examinations, Photography, Videography and Digital Imaging. The laboratory provides expert testimony in these areas when requested. The laboratory maintains international accreditation through the ANSI National Accreditation Board (ANAB).

Staffing

Staffing

The I-MCFSA is authorized 68.6 full time equivalent employee positions. A total of 14 open positions remained unfunded or unfilled at the end of 2020:

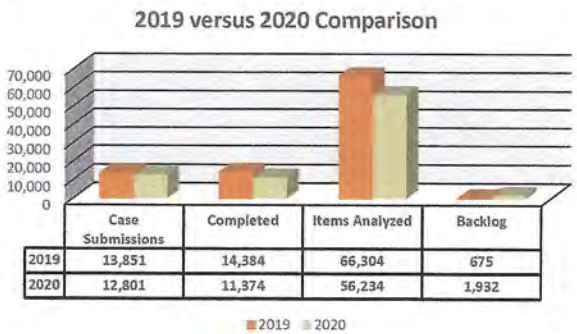
- 1 Forensic Scientist (Firearms) - unfunded
- 3 Forensic Scientist (Seized Drugs) - unfilled
- 1 Forensic Scientist (Trace) - unfilled
- 2 Forensic Scientist (DNA) - unfunded
- 2 Forensic Scientist (Latent Prints) - one unfilled and one unfunded
- 5 Crime Scene Specialist – unfilled



Caseload

The laboratory analyzed 56,234 items of evidence and 11,374 cases in 2020. Some of the larger areas included Seized Drugs with 14,175 evidence items, Crime Scene with 11,755 evidence items, NIBIN with 7.277 evidence items and DNA with 5,642 evidence items analyzed during the year.

The I-MCFSA is still working toward a goal of an average six-week turnaround in each laboratory section. COVID-19 restrictions, personnel shortages and training of staff caused larger turnaround times in 2020. Seized Drugs, Autopsy, Video processing, NIBIN and Latent Print Processing were the only sections meeting this goal at year end. Other processing/analyses were taking slightly longer with the longest being Trace Chemistry at 40.3 weeks.



	Case Submissions	Completed	Items Analyzed	Backlog
2019	13,851	14,384	66,304	675
2020	12,801	11,374	56,234	1,932

Forensic Service Built on a Foundation of Quality, Integrity, Accountability, and Ethics

Administrative Unit—Forensic Administration Section

Overview

The Administration Unit consists of ten and six-tenths positions (the 0.6 representing a part time position), including: Director, Chief Deputy Director, Deputy Director—Forensic Administration, Quality Assurance Manager, Chief Financial Officer, Forensic Operations Manager, three and six-tenths Forensic Evidence Specialists, and a custodian. Areas of responsibility include laboratory supervision, quality assurance program, budget management, purchasing, information technology, security, vehicles, human resources, grant management, evidence handling, request for analysis triage, case file management, and administrative functions.

Forensic Evidence Specialist filing case files.

Human Resources

In 2020, three (3) individuals were promoted within the laboratory, filling the positions of Quality Assurance Manager, Forensic Scientist-Seized Drugs, and Forensic Evidence Technician. New/Refresher Supervisor training was completed, to include workplace harassment, ethics, EEOC information, and personnel training. New employee orientation was also conducted for seven (7) new hires for the Crime Scene Unit.

Evidence Management

Evidence submission/release and forensic analysis triage are critical functions of the laboratory, which is the responsibility of three (3) Forensic Evidence Specialists, within the Forensic Administration Section. In 2020, there were approximately 38,140 items of evidence submitted or released by this section, in addition to triaging 10,269 requests for forensic analysis.

Forensic Evidence Specialist logging information into Justice Trax

Legal Document Management

Subpoena Duces Tecum/Request for Production of Documents occur on a daily basis. In 2020, there were approximately 47 orders completed and approximately 119 Prosecutor requests for forensic case files completed by the Forensic Administration Section.

Grant Management

A component of the continued success of this agency is the receipt of State and Federal Grant monies. This agency continually pursues grant opportunities and has been fortunate in receiving federal and local awards. The I-MCFSA was successful in receiving grant awards totaling over $650,000 for the purchase of equipment for several sections of the laboratory, to provide training and development for the employees, to purchase supplies, to assist in the analysis of DNA cases and to provide grant funded personnel and overtime for various sections of the laboratory to assist in decreasing the overall laboratory backlog.

Training and Tours

In 2020, due to the COVID-19 pandemic, all tours and training were suspended until further notice. Prior to the pandemic, 27 people, including Marion County Judges, police officers and college students, received training and/or tours from Crime Lab personnel in early 2020.

Administrative Unit—Quality Assurance Section

In March of 2020, the I-MCFSA was awarded continuation of accreditation by ANSI National Accreditation Board (ANAB) to ISO/IEC 17025:2017, ANAB Forensic Supplemental AR 3125 and FBI Quality Assurance Standards for Forensic DNA testing and Combined DNA Index System (CODIS). The accreditation process involves an independent evaluation of conformity and compliance to all applicable international standards, as well as our own policies and procedures. All aspects of laboratory management, staff training and proficiency, calibration and maintenance of equipment, suitability of test methods, method validations and control of data, including laboratory examination reports, were examined. Maintaining accreditation is a statement to the I-MCFSA's commitment to providing quality, impartial forensic services to Marion County.

The Quality Assurance Unit conducts internal audits of laboratory activities to ensure ongoing quality and accreditation compliance. A laboratory wide internal audit was conducted in August of 2020 by an internal audit team comprised of thirteen laboratory auditors. Twelve members of the team have been trained as either an internal auditor or assessor by ANAB. A separate internal audit of the DNA CODIS system was conducted in May of 2020. Additionally, all evidence storage locations and lockers were audited in both May and October of 2020. The internal auditing system provides management and all laboratory employees the assurance in the I-MCFSA's ability to provide quality forensic testing services.

The Quality Assurance Unit also conducts an annual proficiency testing program. This program monitors each individual involved in laboratory testing to ensure their ability to conduct examinations of casework, as well as to ensure the use of properly executed and approved methodology. Proficiency tests are provided by qualified forensic proficiency test providers, as available, or by approved observational testing. The 2020 proficiency testing program was conducted as outlined below.

ANAB

CERTIFICATE OF ACCREDITATION

ANSI National Accreditation Board
1900 Regency Parkway, Suite 450, Cary, NC 27518

This is to certify that

Indianapolis-Marion County Forensic Services Agency

has been assessed by ANAB
and meets the requirements of

ISO/IEC 17025:2017

ANAB 17025:2017 Forensic Science Testing and Calibration Laboratories Accreditation Requirements:2018

FBI Quality Assurance Standards for Forensic Testing Laboratories:2011

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-0110
Valid to: 06/30/2021

Pamela L. Sale
Vice President, Forensics

ANAB

ANAB International Accreditation Document

2020 Proficiency Testing Program		
Discipline	**Test Name**	**Number of Tests**
Forensic Documents	Handwriting	1
Forensic Documents	Other Questioned Document	1
Trace Chemistry	Blood Alcohol	3
Drug Chemistry	Controlled Substances	6
Trace Chemistry	Flammables	2
Latent Prints	Examination	3
Latent Prints	Processing	7
Firearms	Examination	6
Firearms	Technician	3
Firearms	Serial Number Restoration	6
Biology (DNA)	DNA Profiling #1	6
Biology (DNA)	DNA Profiling #2	5
Biology (Serology)	Body Fluid Identification	9
Biology (CODIS Review	Observational CODIS	7
Crime Scene Services	Crime Scene Processing	14
Crime Scene Services	Latent Print Processing	10
FET	Autopsy	3

Administrative Unit—Finance and Information Technology Sections

Procurement

Procurement for the laboratory is critical to the agency. Through working with the forensic disciplines, vendors, City's Legal Department and Purchasing Division, the unit ensures that all needed goods and services are procured on time following the City/County guidelines. A wide and diverse range of items must be purchased daily in support of the broad spectrum of mission requirements seen by the I-MCFSA. The process of purchasing an item starts with identifying the need, identifying suitable vendors and identifying the "required by" date. Once the items are received they are inspected by the requesting forensic discipline to ensure they meet the required specifications before being approved for payment. If the item purchased meets the required Asset Management Standard they are entered into the Asset Management database, as well as the City/County Fixed Asset System. Items being replaced are then removed and disposed of per the City of Indianapolis/Marion County standards for Asset Control.

Budget

Restrictions continued with the County General budget in 2020. Along with County General funding we had limited Federal grants supporting the Agency. Careful monitoring of the daily expenses is critical for early identification of potential funding shortfalls. Managers of each discipline play a critical role in identifying needs months ahead of implementation dates, allowing the CFO and Director to alter priorities to ensure funding is available prior to the need.

ANNUAL BUDGET	2018	2019	2020
Annual Budget	$8,310,799.00	$8,335,804.00	$8,703,008.97
Expenses			
Personnel Services	$6,239,563.00	$6,297,980.00	$6,250,629.00
Materials and Supplies	$690,680.00	$715,147.00	$695,095.97
Services and Charges	$1,006,284.00	$1,056,180.00	$1,253,649.00
Properties and Equipment	$374,272.00	$266,497.00	$503,635.000
Funding Sources			
County General Fund	$6,901,792.00	$7,236,984.00	$7,216,926.97
State and Federal Grants	$1,344,008.00	$1,073,820.00	$1,461,082.00
Cumulative Capital Improvement Fund	$65,000.00	$25,000.00	$25,000.00

Information Technology

JusticeTrax LIMS-Plus Version 5.3.34 case management software was upgraded to v5.3.35 in Q1 of 2020. This update included several bug fixes. Also, in Q1 of 2020, v5 LIMS was moved to the new city-county data center leading to a dramatic improvement in speed and performance. An update expected Q2 of 2021 will include several enhancements and performance improvements. Work will resume Q1 2021 for online request cards that will directly import into JusticeTrax LIMS-Plus Version 5. The project had been put on hold pending an API upgrade from JusticeTrax. 2020 was the first full year of all analysts having a dual monitor setup allowing for paperless reviews as applicable. Seized Drugs is currently testing going paperless, including note taking and the review process. This builds upon Blood Alcohol and Fire Debris being paperless. Lab wide transition to Windows 10 was completed Q3 of 2020. Staff training on dashboard data visualization software Microsoft Power BI was completed in Q4 of 2020. Interactive data visualizations to include completed and open cases will help managers make data-driven decisions when implemented in 2021.

Biology Unit - DNA & Serology Sections

The Biology Unit consists of two sections: DNA and Serology. It is staffed with one Technician, four Serologists and five analysts trained in both Serology and DNA analysis. One of the Serologists also serves as the Biology Section Supervisor and one DNA/Serologist analyst serves as the DNA Technical Leader. The DNA Technical Leader is responsible for overseeing the technical operations of the DNA program.

All biological cases begin with the examination of evidence by Forensic Scientists. They examine the evidence employing various visual, microscopic, and chemical techniques in search of potential biological stains. Once found, the Serologist documents, identifies, and prepares samples of the biological stains for the DNA Section. Clothing, bedding, weapons, and other evidentiary items are carefully photographed, documented and sampled during the Serologist's search for stains of potential interest.

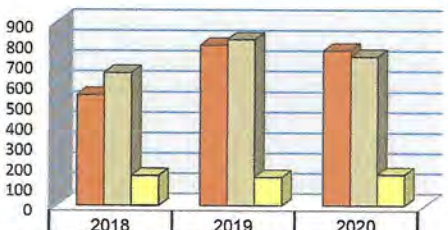
Forensic Lab Technician logging evidence into system.

Forensic Scientist Setting up DNA extraction

The DNA Section develops DNA profiles from evidentiary samples for comparison with DNA profiles of suspects, or for submission into the Combined DNA Index System (CODIS) database. This database is particularly useful when a biological sample is obtained from the crime scene and known suspect(s) do not exist. CODIS allows unknown profiles to be searched against other profiles in the database, which are generally those of convicted felons, arrestees (in some states) and unknown profiles from other cases. Currently, there are over nineteen and a half million (19,500,000) DNA profiles in the national database. The Biology Section uploaded 177 DNA profiles into CODIS in 2012.

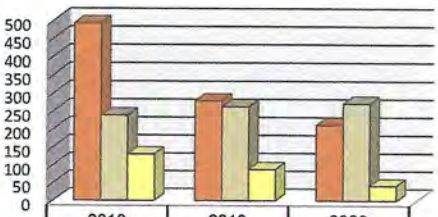
The Biology Section casework resulted in seventy-four confirmed CODIS hits during 2020, including eighteen homicide cases, nineteen sexual assault (or attempted sexual assault) cases, fifteen burglaries, nine robberies and armed robberies, two arson, three hit and run and eight miscellaneous offenses. These are cases which may have potentially remained unsolved, or taken significantly longer to solve, without the use of CODIS.

DNA



	2018	2019	2020
Case Submissions	545	787	761
Completed	651	814	731
Backlog	148	140	153

Serology



	2018	2019	2020
Case Submissions	493	279	212
Completed	239	263	272
Backlog	131	88	42

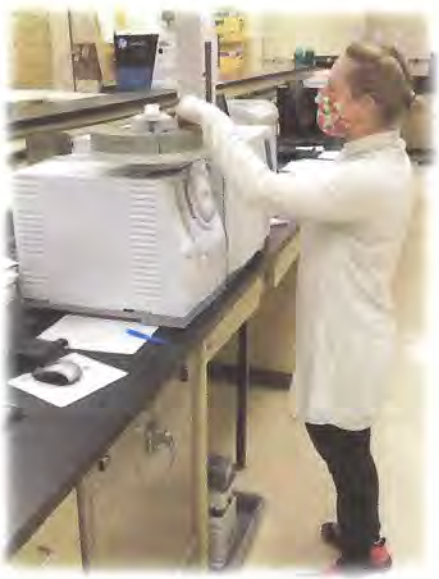
Chemistry Unit - Seized Drugs Section

At the close of 2020, the Seized Drugs Section was staffed by three trained Chemists, including the Supervisor, and one Trainee. Interviews for four vacant positions were conducted at the end of 2020, and all four positions were filled, with start dates for the four in February, March, and April. Compared to the 2019 data, the 2020 data revealed a 33.05% decrease in case submissions, and a 32.88% decrease in case completions. The Seized Drugs Section has been working with half of their normal staffing for the majority of 2020. Due to this issue and the COVID-19 pandemic, efforts have been made with the Prosecutor's Office to prioritize cases based on charging levels. Request cards are not normally submitted for most Seized Drug cases, and requests are not entered until the case is picked up by the Chemist from the IMPD Property Room. The total possible number of Seized Drug cases submitted to the IMPD Property Room in 2020 is unknown, therefore potential numbers for 2020 cases submitted to the laboratory cannot be known.

Discussion of synthetic cannabinoid analog and control status has been ongoing, and an importance on safety for high potency drug exhibits remains. The Seized Drug Section has received several new synthetic cannabinoid analog and synthetic opiate submissions in 2020, which require considerable time to determine their control status, as well as time to purchase the reference material. The Seized drug Section continues to receive many clandestine tablets such as Methamphetamine tablets, which require additional time and effort to test and confirm. Agreements were reached in 2019 to limit the number of clandestine tablets tested, but the option remains for additional testing to occur upon request. This agreement has been adhered to for the vast majority of applicable cases.

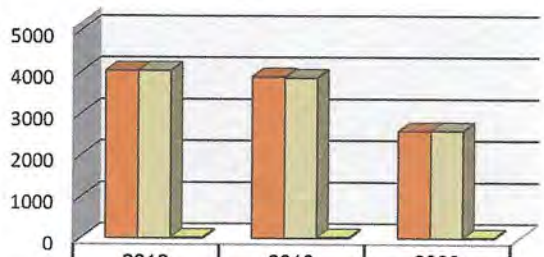
As of October 2020, the Supervisor for the Seized Drug Section is also the Supervisor for the Trace Chemistry Section consisting of Fire Debris and Toxicology (BAC) disciplines.

Large submission of marijuana to be examined.



Forensic Scientist Trainee testing on GCMS

Seized Drugs



	2018	2019	2020
Case Submissions	4030	3885	2581
Completed	4032	3856	2588
Backlog	18	22	14

Chemistry Unit—Trace Chemistry Section

The Trace Chemistry Section, comprised of Fire Debris and Toxicology (BAC) disciplines, is staffed with two full time Trace Chemists, a Supervisor, and one cross-trained Seized Drug Chemist who analyzes fire debris evidentiary items.

Blood alcohol analysis is performed to determine the concentration of ethanol in blood from individuals suspected of operating a vehicle while intoxicated. Fire debris analysis is performed on samples collected from suspected arson fires to determine if ignitable liquids are present. This information helps Fire Investigators determine the cause and potential criminal nature of fires.

Case submissions in 2020 decreased 17.42%, from 2778 cases in 2019 to 2294 cases in 2020. Case completion also dropped 54.14%, from 3203 cases in 2019 to 1469 cases in 2020. Considerable work in 2019 was done in reducing the Blood Alcohol backlog, which partially explains the large drop in case completion rate. Additionally, the laboratory was on limited staffing for several months due to the COIVD-19 pandemic, which greatly impacted case submission and completion rates. The Shimadzu Heated Head Space Gas Chromatograph (GC) was also replaced with an Agilent 7890B GC with Heated Head Space analyzer in 2020, which required analyst time to train on and validate. A 2nd unit, which replaced the Shimadzu GC2010 Plus Direct Inject instrument, was installed in late 2020 and is awaiting validation.

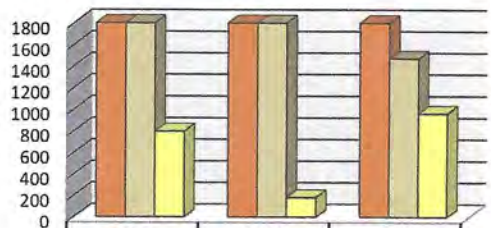
The average case turnaround time increased greatly from a 12-month average of 57.9 days in 2019 to 76.3 days in 2020, and the overall backlog turnaround time increased from 4.6 weeks to 40.3 weeks. Fire Debris caseload has greatly affected this number, with the oldest unassigned case being from January of 2020.

At the end of 2020, one Trace Chemist was hired to begin work in March of 2021. The Fire Debris training manual was updated and completed, with the intent to train all the Trace Chemists on Fire Debris analysis to reduce the Fire Debris backlog. Validation of the 2nd Agilent 7890B, along with the training of the newly hired Chemist in Blood Alcohol, will help reduce the backlog of Blood Alcohol cases.

Agilent 7890B utilized for BAC analysis.

Forensic Scientist pipetting sample

Fire Debris and Toxicology



	2018	2019	2020
Case Submissions	2805	2778	2294
Completed	2467	3203	1469
Backlog	797	183	962

Criminalistics Unit - Firearms Section

The Firearms Section examines Firearms related evidence. This includes firearms, fired bullets, fired cartridge cases and other fired ammunition components. The Firearms Section consists of 4 Full-Time Firearms Examiners (which includes the section supervisor) and another Firearms Examiner who works 30 hours per week. The Firearms Examiners compare fired evidence and attempt to determine if the evidence was fired by a particular firearm. The section also consists of two Firearms Technician whose primary goals are to test fire firearms and enter evidence into the National Integrated Ballistics Information Network (NIBIN) and one NIBIN Technician who receives evidence from Examiners and Firearms Technicians for NIBIN entry.

NIBIN is used to acquire images of cartridge cases found on crime scenes or obtained from test fires of recovered firearms and look for potential "matches". The potential matches are valuable information to Detectives as it may connect crime scene to crime scene, or a crime scene to a firearm.

The Firearms Section continues to receive and process cases for the "Expedited NIBIN Program". It is the goal of the Expedited NIBIN Program to receive cases submitted by an IMPD Firearms Liaison on a daily basis and enter those cases into NIBIN the same day.

Along with requested casework submissions, a total of 5,652 NIBIN entries were created during 2020, almost 700 more than 2019. A grand total of 1,099 NIBIN associations were the result of those entries.

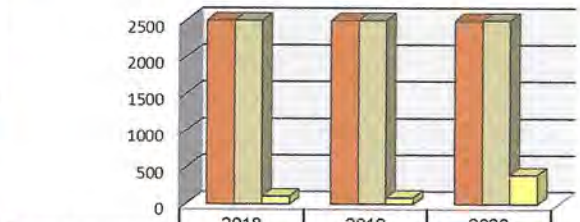
While the Firearms Section staffing levels were maintained from 2019 levels, the Firearms Section was not immune to the challenges that 2020 brought forth. Due to the laboratory shutdown, hundreds of "daily drop off" cases were unable to be received or processed, which created a huge backlog. Along with the huge NIBIN backlog, requested case submissions increased by 58% in 2020 and increased the requested case backlog significantly. Once Firearms Section personnel started to report back to the lab after the shutdown, several RUSH case requests were made by both Prosecutors and Detectives. The balancing act of backlogged requested cases, rush cases and Expedited NIBIN cases was not easily achieved and overwhelmed the section. After several focused efforts aimed at the reduction of the Expedited NIBIN backlog and section personnel working overtime, daily drop off cases finally resumed in early 2021.

Despite a year of setbacks, there were several improvements to the Firearms Section in 2020. Two individuals have been slated to become Firearms Technicians. An Assistant Section Supervisor was named to facilitate smooth operations in the absence of the Section Supervisor, assist in administrative tasks, quality assurance compliance and supervisory details. Also, the Firearms Section has acquired a new Cotton Box for the recovery of test fired bullets.

Like other sections of the laboratory, it will take time to recover from the COVID shutdown; however, the Firearms Section has made aggressive attempts towards catching up to pre-COVID backlog levels.

Forensic Scientist microscopically comparing evidence.

Firearms and NIBIN



	2018	2019	2020
Case Submissions	3566	3882	4634
Completed	3568	3889	4179
Backlog	105	85	401

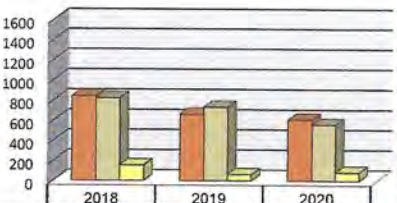
Firearms Technician checking in daily NIBIN cases.

Criminalistics Unit - Latent Print Section

The Latent Print Section within the I-MCFSA is staffed with three (3) Latent Print Technicians and two (2) Latent Print Examiners. Most of the work begins with items of evidence submitted for latent fingerprint processing which is carried out by the technicians. These items consist of anything from firearms to cell phones to floor safes. Friction skin is found on the surfaces of one's hands and feet. Latent fingerprints are left on surfaces and are generally not visible to the naked eye. Typically, these "invisible" prints need to be processed with chemicals or powders in order to become visible. The chemicals used to develop the latent prints depend on the type of surface they were deposited to. Various forms of alternate light sources, along with high resolution cameras, are used to visualize and record the fingerprints. Contrary to popular belief, fingerprints are not always left behind when a person touches an object. It depends on how the object was touched and if there is a substance on the skin to transfer to the object. It also depends on the surface that is receiving the prints and the environment. During 2020, over 3200 items of evidence were processed for latent fingerprints in over 500 cases submitted.

Once the latent fingerprints have been developed and recorded, the images are transferred to the Latent Print Examiners for comparison. The Examiners use a methodology known as Analysis, Comparison, Evaluation and Verification, or ACE-V. During this process, the Examiners look for levels of detail in ridge pattern, pores within the friction skin, and ridge flow. All identifications and eliminations are verified by another Examiner within the section. Unidentified prints are entered into AFIS, Automated Fingerprint Identification System, for a search within the database for potential candidates. This system does not perform the identification as the Examiner still must make the comparison. During 2020, nearly 50 cases were submitted and close to 150 items examined.

Latent Print (Exam and Processing)



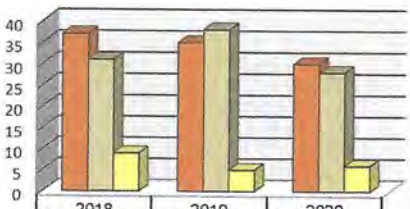
	2018	2019	2020
Case Submissions	841	661	608
Completed	821	732	557
Backlog	154	60	81

Latent Print Technician observing for prints.

Criminalistics Unit - Forensic Documents Section

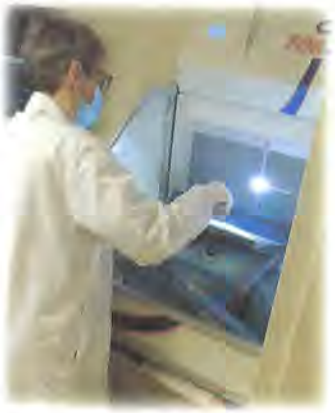
The Forensic Documents Section within the laboratory consists of one Examiner. Most of the items of evidence submitted for examination consist of handwritten items where the identification of the writer is in question. These generally are writings on paper, however can be from any surface. Handwriting can be identified or eliminated as long as there is a sufficient amount of handwriting characteristics for comparison, is written naturally and comparable known samples for comparison are available. Many times, the Examiner may have to collect a known writing standard from a subject for comparison. This would include the collection of dictated samples of the questioned writing along with the completion of a standard form. Aside from handwriting comparisons, the Documents Section also conducts counterfeit currency examinations, indented writing examinations, alterations and obliterations examinations, and physical match examinations of paper items.

Document Examination



	2018	2019	2020
Case Submissions	37	35	30
Completed	31	38	28
Backlog	9	5	6

Forensic Scientist performing indented writing impressions analysis.



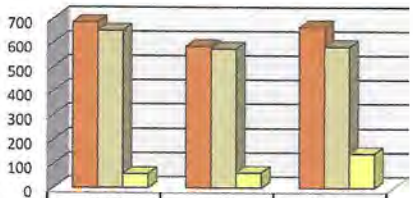
Forensic Service Built on a Foundation of Quality, Integrity, Accountability, and Ethics

Crime Scene Unit - Crime Scene Section

The Crime Scene Section is the only section staffed 24-hours a day/365 days a year. There were a total of 12 full time Crime Scene Specialists on staff at year's end, including the Section Supervisor and three Technical Leaders. For most of the year, 6 of the Crime Scene Specialists were in training, with all successfully completing the program by the fall of 2020. This allowed for the increase in the number of full time staff at year's end from that of 2019. In conjunction with the transfer of individuals to other sections of the laboratory, the addition of seven new Crime Scene Specialists early in 2021 will increase staffing to 17, with all positions filled. There was continued improvement in completed reports and case notes by team members, which led to continued satisfaction from our customers (Detectives, Prosecutors and Defense Attorneys).

In 2020, the section responded to a total of 658 crime scenes, which is a significant increase from the 553 crime scenes responded to in 2019. There was a total of 665 case submissions, with the section completing a total of 584 cases within the year. The backlog stood at 144 cases by year's end, which is a substantial increase from 2019. The agency goal of a 42-day case completion was not met with an average turnaround time of 47.58 days, which is an increase from 2019. These numbers illustrate an incredible passion, dedication and commitment by the team members to provide a quality product while completing searches, documentation, scene photography, videography, scene sketching, evidence collection, and evidence processing. All of this was successfully executed while working on the on the lines during the global pandemic of 2020.

Crime Scene Services



	2018	2019	2020
Case Submissions	685	585	665
Completed	650	575	584
Backlog	59	63	144

Crime Scene Specialist completing evidence photography at an outdoor crime scene.

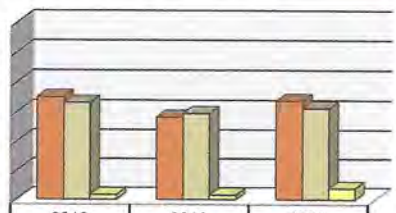
Crime Scene Unit - Forensic Evidence Technician Section

The Forensic Evidence Technician (FET) Section attends autopsies conducted by the Marion County Coroner's Office, on cases involving in investigations of homicide, suspicious deaths and deaths involving traffic accidents where criminal charges will be involved. The duties include photography, collecting physical evidence including clothing, blood, hair, fibers, Touch DNA and other trace evidence, in addition to collecting final case fingerprints for identification. The FET section consists of four individuals, including the Supervisor. The FETs also have secondary responsibilities for processing evidence items collected at autopsy. The FET Supervisor performs crime scene video mastering, uploading, and duplications of predigital era VHS videos. The FET Section Supervisor is also responsible for maintaining the supplies, cameras and videography equipment for the Crime Scene Unit.

In 2020, the section completed a total of 621 cases and processed 5050 evidence items. The average turnaround time for the section was 22.9 days, 32.90 for autopsy and 9.2 days for video cases, which is under the agency's 42-day goal.

Forensic Evidence Technician packaging evidence

Forensic Evidence Technician



	2018	2019	2020
Case Submissions	701	566	677
Completed	663	591	627
Backlog	32	29	76

Appendix H

Forensic Needs-ISDT

Medical Examiner Feasibility Study

Forensic Laboratories Report

Indiana State Department of Toxicology

Background: The Indiana State Department of Toxicology (ISDT) was established in July of 2011 as per I.C. 10-20-2. The mandate of the department is to provide analytical services, training, and education to the criminal justice system of the State of Indiana with respect to toxicology and pharmacology involving criminal and/or death investigations.

The ISDT is under the leadership of a Director who is appointed by the governor.

The Department is divided into two sections: analytical testing and breath testing. The analytical section is responsible for the testing of blood samples typically submitted by law enforcement or coroners for the presence of a variety (panel) of drugs including alcohol. The breath testing section certifies breath testing instruments throughout the state, provides training and certification to the breath test operators and certifies ignition interlock models.

In 2020 the ISDT received 12,838 submissions an increase of 345 cases from the previous year. In less than a decade the department has seen an overall increase of submissions more than 100%.

The Fiscal Year 2020 budget for the ISDT was $2,801,920.

Requisite Needs: Currently, the ISDT is in the process of expanding the number and type of drugs in its current test panel by a including several additional benzodiazepines and barbiturates. To better serve its client agencies, the ISDT needs to improve services regarding the increasing numbers and types of both opioids and cannabinoids. To provide this additional testing will require additional funding for increased staffing and equipment.

A comprehensive plan for establishing a statewide medical examiner office that includes ISDT providing testing services to all coroners, will require enhancement of the ISDT capabilities in terms of the number and types of testing performed to meet the anticipated expanded demand for service.

The enhancement in the ISDT services would require a funding commitment for additional staff, equipment, and new capital improvement expenditures.

Accreditation/Certification: Since 2018, the Indiana State Department of Toxicology has maintained its accreditation by the American National Standards Institute National Accreditation Board.

Two of the scientists assigned to the ISDT are individually certified by the American Board of Forensic Toxicologist.

Annual Report: See attached.

Indiana State Department of Toxicology

2020 Annual Report

Cover photo:

The front cover shows one of the two Liquid Chromatograph Mass Spectrometers (LC/QQQ) at the State Department of Toxicology. The Department uses these instruments to perform confirmation testing of blood samples for benzodiazepines, stimulants, and opioids*. Visit https://www.in.gov/isdt/ for a complete list of the drug and metabolite screening and confirmation testing performed by ISDT.

*The Department has performed screening for opioids since 2017 and added opioids confirmation testing to its capabilities in July of 2020, increasing the number of drugs and metabolites it confirms from 26 to 43, not including alcohol analysis.

Overview

The Indiana State Department of Toxicology (ISDT) is divided into the two primary areas analytical laboratory services and the breath test program. Both areas provide forensic toxicological services for the state of Indiana. ISDT continued its ongoing accreditation by ANAB in 2020. The audit held in April of 2020 resulted in no findings in either the analytical laboratory services or the breath test program.

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 2020 the Indiana Criminal Justice Institute (ICJI) awarded ISDT $281,201 from unspent 2019 funds and $373,244 in new funds, for a total award of $654,445 in National Highway Traffic Safety Administration grant funds. These funds will be used for reduction of ISDT's analytical drug case backlog/turnaround times, the purchase of supplies and equipment/instrumentation to support the validation and analysis of barbiturate confirmation testing, and expansion of the current benzodiazepines confirmation panel. It is ISDT's goal to discontinue outsourcing barbiturate confirmation testing and to provide a more extensive benzodiazepines panel in 2021.

Staffing

ISDT ended 2020 with 21 of its 24 positions filled, as detailed in Table 1. Staffing has remained the same from 2019. 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. 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 12/31/20

Position	*Staff*
Director	1
Assistant Director	1
Toxicologist/QC Coordinator	1
General Counsel	1
Program Coordinator	1 (1 vacant)
Administrative Assistant	1 (1 vacant)

Position	*Staff*
Analytical Lab Supervisor	1
Forensic Scientist	10
Evidence Control Specialist	2
Breath Test Program Supervisor	1
Breath Test Instrument Inspector	4 (1 vacant)

Training

In furtherance of ISDT's objective of providing education on the science of forensic toxicology, Department personnel provided training on numerous occasions in 2020. The Department toxicologist provided training at two Drug Recognition Expert schools and one Indiana Law Enforcement Academy Police Basic Training school. The toxicologist also provided training for the Marion County Prosecutor's office, the Laporte-Starke Regional SART meeting, and the DFSA meeting for the Academy of Forensic Nurses. The assistant director was a guest lecturer at Purdue University.

Several ISDT staff members received training in 2020. Two forensic scientists became proficient in opioid confirmation testing as part of the opioid confirmation panel validation process, and another scientist was trained in THC analysis. One forensic scientist attended the ANAB Assessor training, bringing the number of staff who have received this training to four. The ANAB training allows ISDT staff to participate in accreditation audits of other forensic laboratories, which provides opportunities to observe other forensic programs. The information gained from these audits helps ISDT strengthen its own analytical and breath test programs. Finally, the department toxicologist attended several online trainings, and the general counsel attended the annual OVWI defense seminar and the Legal and Ethics Conference of the Indiana Office of Inspector General.

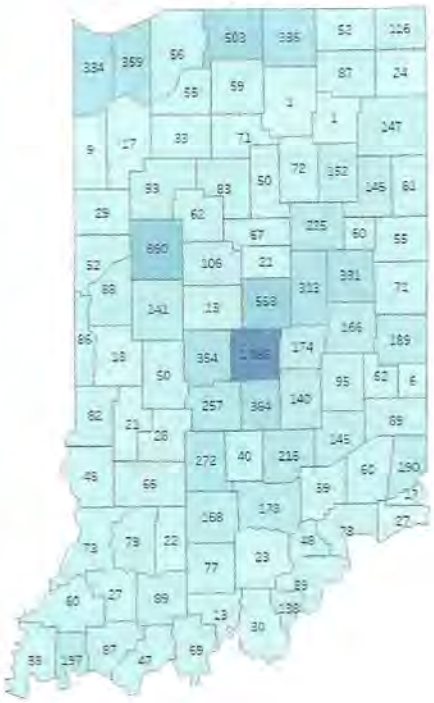
Customers

The following maps depict by county the numbers of completed evidentiary breath tests administered (*see* map on left) and the number of cases submitted to ISDT for laboratory analysis (*see* map on right) in 2020. By statute all evidentiary breath tests are required to be performed on instruments certified by ISDT, so the numbers of breath tests provided here account for all evidentiary breath tests conducted in the state last year. The numbers of laboratory submissions provided here, however, only account for those cases submitted to ISDT and do not account for all 2020 Indiana law enforcement

Figure 1: Maps of breath test completions and laboratory submissions in 2020

Completed Breath Tests

Laboratory Submissions



laboratory submissions, as law enforcement agencies may choose to use laboratories other than ISDT's (e.g., private laboratories, other public laboratories, hospitals) for their analysis.

Testimony

The Department received approximately 1,040 subpoenas in 2020, which is an increase of 32% compared to 2019. Despite this increase, actual testimony was provided 56 times in 2020 as compared to 58 times in 2019. Testimony was provided twenty times by forensic scientists, seven times by the assistant director, three times by the breath test program supervisor, and twenty-six times by the forensic toxicologist. Testimony includes depositions and court appearances related to laboratory testing, breath test procedures, and interpretation of laboratory and breath test results. Sixteen times in 2020 ISDT personnel appeared at courts in response to subpoenas but did not testify due to plea agreements, continuances, or other case resolutions.

Blood Analysis

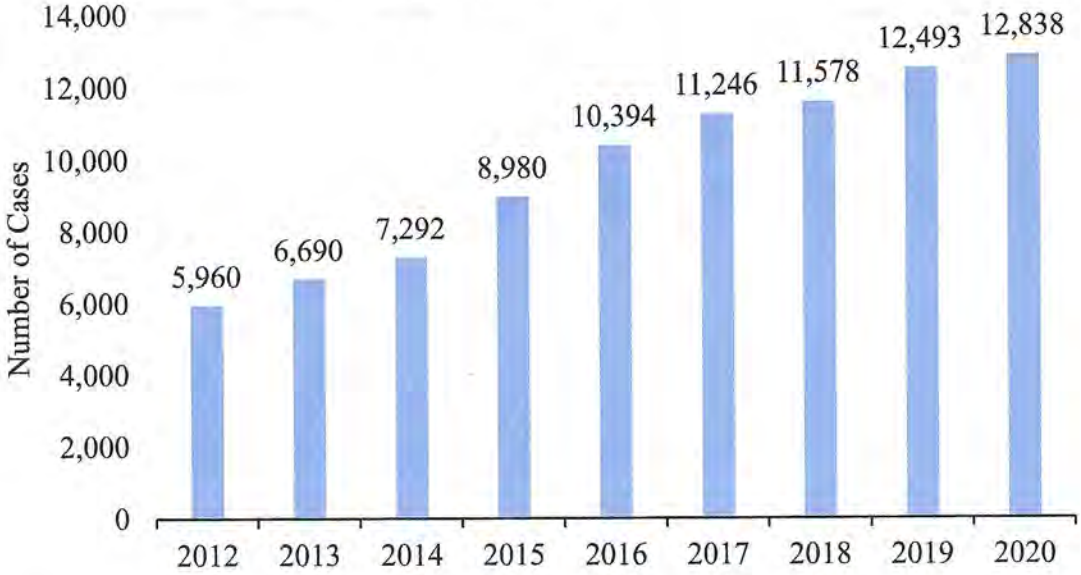
ISDT analyzed blood specimens submitted by 407 agencies in 2020 compared to 392 agencies in 2019. Submissions were received from coroners, town marshals, municipal and county departments, and state law enforcement agencies. ISDT received cases from sixteen agencies that had not previously submitted cases to ISDT and from 53 agencies that did not submit cases in 2019 but had submitted cases in previous years. 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. Each expired kit returned to the agency results in cost savings to the Department of approximately $3.00 per kit.

ISDT continued to see an increase in case submissions in 2020 as compared to previous years, as shown in Chart 1. The Department received 12,838 submissions in 2020, which is 345 more submissions than were received in 2019, or an increase of approximately 2.8%. This equates to a 115% increase in case submissions since 2012.

Cases may be submitted to ISDT for alcohol analysis, drug analysis, or both. Cases submitted in 2020 included 9,209 requests for alcohol analysis and 8,798 requests for drug analysis. In total, the Department received 18,007 requests for analysis in 2020 compared to 17,225 in 2019, or a 4.5% overall increase in analysis requests. Of the cases submitted, 5,061, or 39.4%, had requests for both alcohol and drug analyses, while 60.6% of the cases submitted had requests for either alcohol or drug analysis.

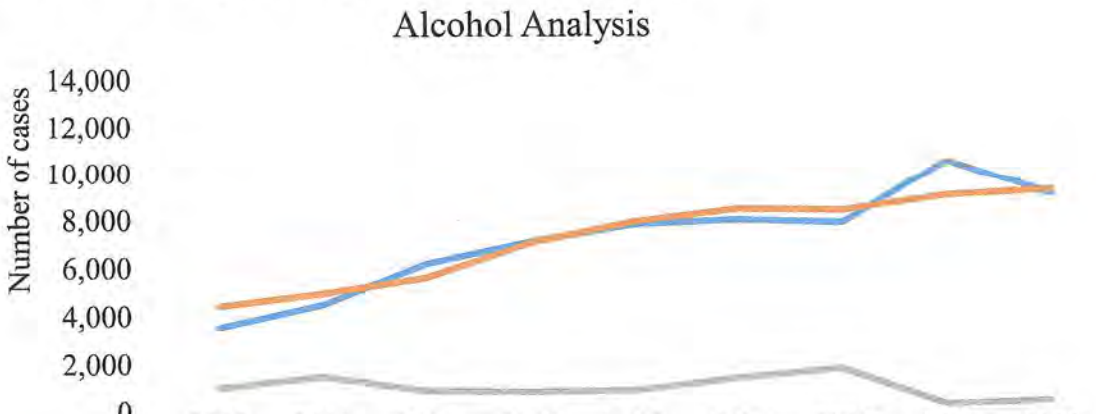
From January 1, 2020, to December 31, 2020, the average time from receipt of a case specimen to entry of the analysis request into the Department's Laboratory Management Information System (LIMS) was one and a half days. The average time from entry of a request for alcohol analysis to issuance of the laboratory report was 17.54 days. For a drug analysis request, the average time from request entry to report issuance was 43.25 days. The time between entering the request to issuing a report varied in individual cases depending if the case was positive or negative and for drug cases whether a positive case had only one drug present or multiple drugs.

Chart 1: Department of Toxicology Submissions



ISDT completed 9,045 requests for alcohol analysis in 2020, compared to 10,493 completed requests in 2019, as shown in Chart 2. The number of pending cases in queue for alcohol analysis at the end of 2020 was higher than in 2019 but still lower than the previous seven years prior to 2019. While outsourcing has been used for some drug analysis over the past nine years, all alcohol analysis has been completed in-house by ISDT.

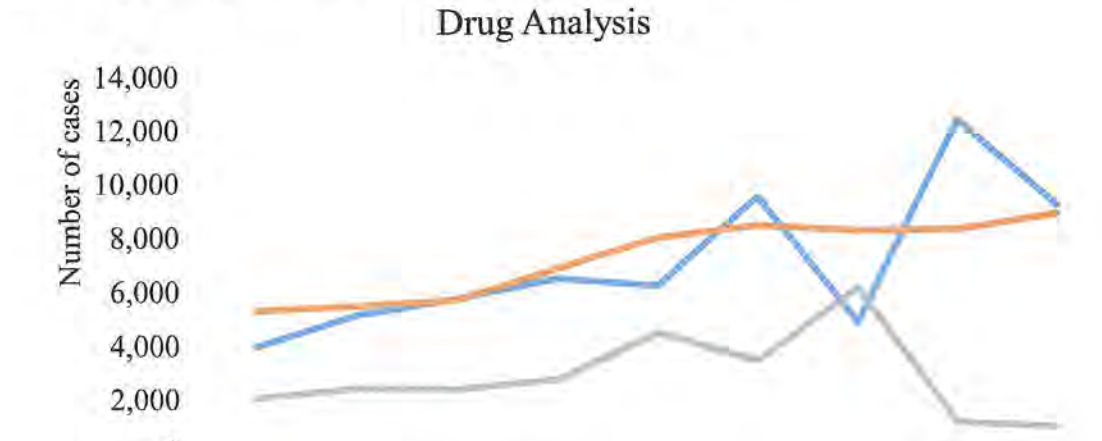
Chart 2: Alcohol Analyses Completed, Requests, and Pending



	2012	2013	2014	2015	2016	2017	2018	2019	2020
Completed	3,538	4,484	6,187	7,098	7,797	7,973	7,842	10,493	9,045
Requests	4,428	4,952	5,591	7,058	7,911	8,428	8,368	8,989	9,209
Pending	1,011	1,480	868	820	871	1,369	1,761	252	403

The number of cases pending drug analysis at the end 2020 was the lowest in ISDT's history as a state agency, as shown in Chart 3. Several factors contributed to this success, including grant funding for outsourcing provided by ICJI, the hiring of a tenth scientist in 2019, and ISDT's doubling its drug screening capabilities by adding a second drug screening instrument and training two additional scientists in drug screening in 2019.

Chart 3: Drug Analyses Completed, Requests, and Pending



	2012	2013	2014	2015	2016	2017	2018	2019	2020
Completed	4,003	5,153	5,739	6,475	6,185	9,473	4,812	12,31	9,078
Requests	5,316	5,493	5,686	6,849	7,962	8,406	8,201	8,236	8,798
Pending	2,061	2,412	2,361	2,721	4,438	3,408	6,074	1,056	872

Of cases ISDT screened for drugs in 2020, 70.7% screened positive for one or more drugs or drug metabolites, compared to 72% in 2019 and 68% in 2018. Of the cases that screened positive, 28.4% were positive for opioids, which was an increase from the 20.6% positive for opioids in 2019. From 2019 to 2020, positive screens for benzodiazepines/z-drugs decreased from 21.4% to 20.8%, while positive screens for stimulants increased from 30.5% to 37.3%. Positive screens for barbiturates dropped from 1.3% in 2019 to 0.8% in 2020. Positive screens for drugs from the cannabinoids class increased from 40.4% in 2019 to 52.1% in 2020.

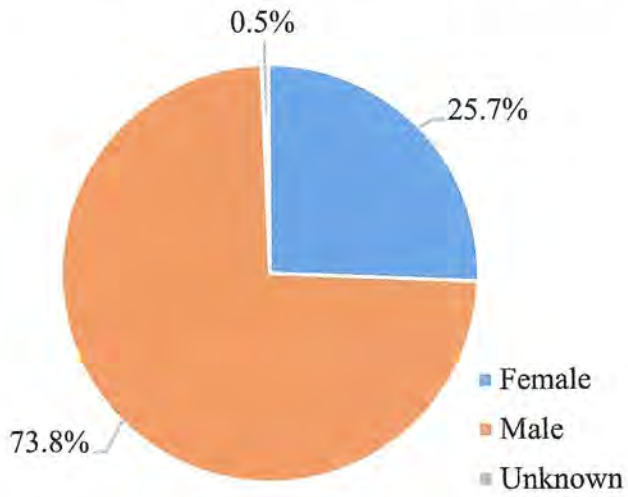
As shown in Table 2: Pending Analysis Summary, there were 1,275 pending alcohol and drug requests at the close of 2020. Most of the pending requests were for drug analysis, which is consistent with previous years. As the number of pending drug cases has decreased, so have the ages of the drug cases awaiting analysis.

Table 2: Pending Analysis Summary

	2012	2013	2014	2015	2016	2017	2018	2019	2020
Alcohol Analysis	1011	1480	868	820	871	1369	1761	252	403
Drug Analysis	2061	2412	2361	2721	4438	3408	6074	1056	872
Total	3072	3892	3229	3541	5309	4777	7835	1308	1275
Over 15 Days	2012	2013	2014	2015	2016	2017	2018	2019	2020
Alcohol Analysis	856	1390	680	555	681	1062	1492	6	68
Drug Analysis	1895	2318	2165	2477	4252	3095	5823	783	556
Total	2751	3708	2845	3032	4933	4157	7315	789	624
Over 30 Days	2012	2013	2014	2015	2016	2017	2018	2019	2020
Alcohol Analysis	691	1063	461	261	396	762	1279	3	2
Drug Analysis	1688	1989	1956	2181	3944	2752	5586	483	261
Total	2379	3052	2417	2442	4340	3514	6865	486	263

When specimens are submitted to ISDT for testing, the submitting agency indicates offense information on the Toxicology Analysis Request form. In 2020, 66.5% of the requests ISDT received were related to investigations of operating a vehicle while intoxicated; 18.3% were related to personal injury crashes, including serious bodily injury; 18.9% were related to property damage crashes, and 3.5% were related to fatal crashes, with other request types accounting for the remaining 9.3%. Some officers indicate multiple offenses on the analysis request form, which pushes the total percent for all types of offenses to over 100%. Nonetheless, of the 12,838 cases received, 94.7% were traffic related.

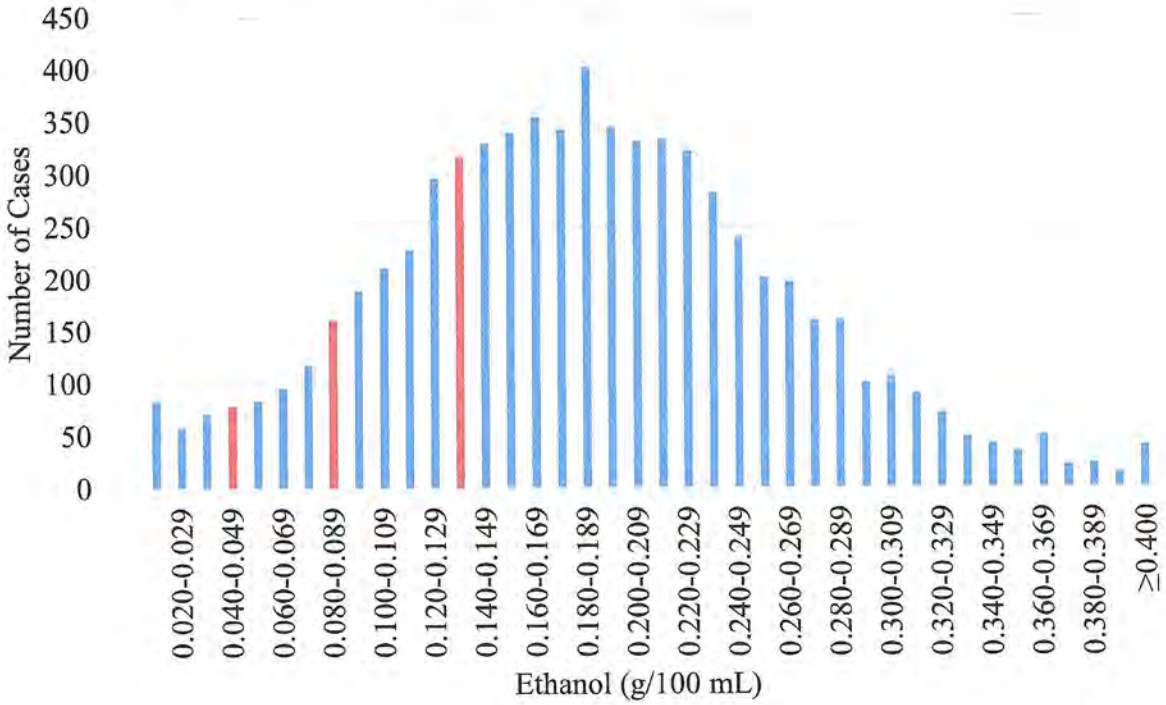
Chart 4: Blood Alcohol Analysis by Gender



As indicated by submitting agencies on Toxicology Analysis Request forms, the majority (73.8%) of specimens submitted for alcohol analysis were from male subjects, and 25.7% were from female subjects, which is consistent with 2019. (In 0.5% of cases gender was not indicated.) The male-to-female ratio for blood alcohol analyses is consistent with the ratio of male-to-female breath test subjects, 75.3% to 24.7%.

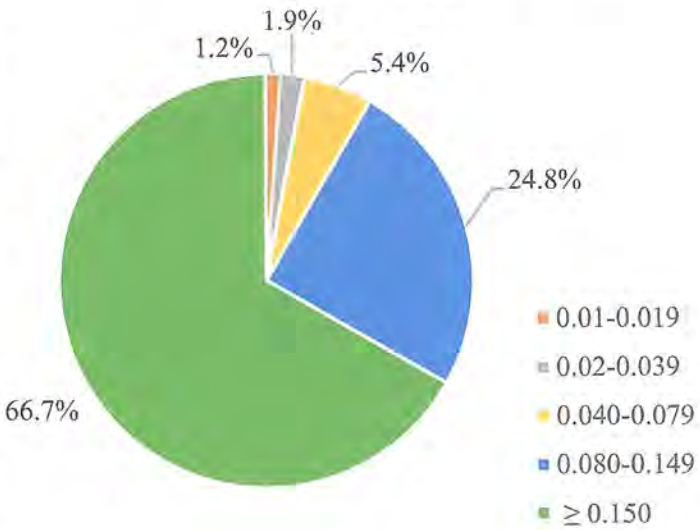
Chart 5 shows the distribution of blood alcohol analysis results by blood alcohol concentration. The red bars indicate the statutory alcohol limits for commercial driver license holders (0.040 g/100 mL of blood), and operation of a vehicle (0.080 and 0.150 g/100 mL of blood).

Chart 5: Blood Alcohol Case Distribution by Results



Of the total number of blood alcohol results reported, 91.5% of the alcohol concentrations were greater than or equal to 0.080 g/100 mL of blood, which is consistent with the 92.4% of breath test subjects (Chart 9) with alcohol concentrations greater than or equal to of 0.080 g/210 L of breath. The percentage of blood test subjects with alcohol concentrations greater than or equal to 0.150 g/100 mL of blood was 66.7% (Chart 6), which is significantly more than the 46.8% of breath test subjects with alcohol concentrations greater than or equal to 0.150 g/210 L of breath (Chart 9).

Chart 6: Blood Alcohol Subject Test Results by Selected Ranges



Breath Test Program

The online program for breath test operator training and recertification was modified in 2020 to allow operators access to update their email addresses and agency affiliations. Prior to this improvement, ISDT made these entries to operator profiles after notification of changes. Allowing operators to update their own profiles at any time eliminating the need of a separate notification to ISDT should improve the ongoing accuracy of operator profiles.

The online breath test operator training and recertification program can be accessed by a link on ISDT's website (www.IN.gov/isdt). Additional information on the website includes directions for ordering evidence collection kits, sample submission protocols, lists of drugs included in testing, available breath test operator training, breath test program fees, 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.

There are currently eight ignition interlock device models certified by ISDT. Certifications are valid for three years. One device model was recertified in 2020, maintaining its Indiana certification. Vendors of certified device models reported that 1,541 ignition interlock devices were installed in vehicles in Indiana at the beginning of December 2020. This number is a snapshot in time and does not reflect all devices installed over the course of the entire year. The 2020 number is an increase over 2019 but is consistent with 2018 numbers.

In 2020 the number of Intox EC/IR II evidentiary breath test instruments located throughout the state was 203, as shown in Figure 2. This was the same number of deployed instruments as in 2019, but is four fewer than reported for 2018 and six fewer than reported for 2017.

New breath test rules promulgated in Title 260 of the Indiana Administrative Code went into effect in October 2020. The new rules simplify the approved method for administering breath tests and now include instructions for every status message of the Intox EC/IR breath test instrument.

Figure 2: Location of ISDT Certified Breath Test Instruments

Indiana Administrative Code Title 260 requires ISDT to inspect and certify each breath test instrument deployed for evidentiary use at least once every 180 days. All breath test instrument inspections and certifications remained current during 2020, with over 850 inspections completed by ISDT's three breath test inspectors. The measurement uncertainty for each evidentiary breath test instrument is calculated as part of each inspection and is reported on the breath test instrument certification as required by ISO/IEC 17025 accreditation standards.

ISDT conducted 11 breath test operator classes at the Indiana Law Enforcement Academy in 2020, despite having to cancel four classes scheduled March through June. Enrollment for each class was limited to 40 students. A total of 425 law enforcement officers were trained and certified as breath test operators in 2020.

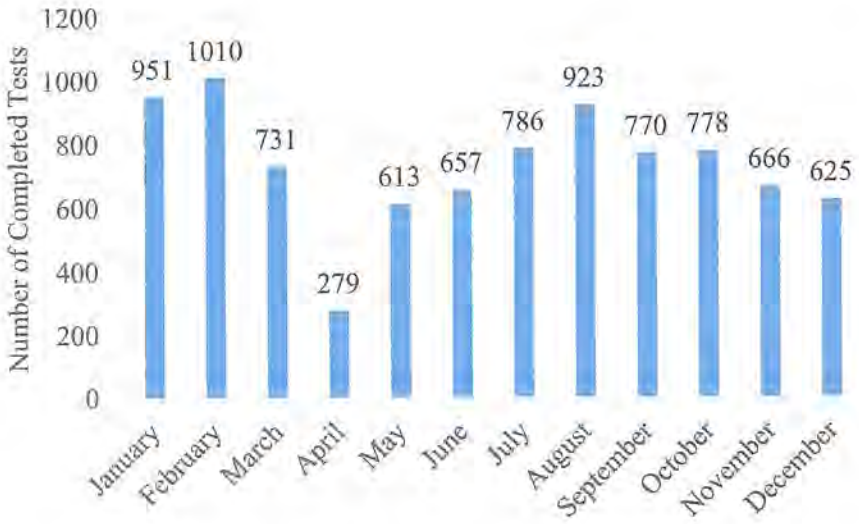
In 2020 the breath test program included 4,492 certified breath test operators employed by 417 law enforcement agencies. While the number of agencies with trained breath test operators increased from the 2019 number of 392, the total number of certified operators decreased from the 2019 total of 4,970.

To maintain certification, a breath test operator must be recertified at least every two years from the month of the last certification or recertification. The number of recertifications per year is determined by the number of certifications that expire during that year. Upon deployment of the Intox EC/IR II breath test instrument in 2014, all certified breath test operators were trained and recertified, which has resulted in most breath test operators being recertified in even numbered years: 2,825 operators were recertified in 2020, compared to 802 in 2019; 3,269 operators were recertified in 2018, compared to 549 in 2017.

There were 13,102 attempted breath tests in 2020, with 8,789 tests (67%) completed. A breath test is "completed" when the subject delivers two breath samples with measurable results that agree with each other within 0.020 g/210L. In 2019 there were 16,680 attempted breath tests with 11,990 tests completed.

The number of tests completed each month during 2020 is shown in Chart 7. The least number of completed breath tests was in April, while the highest number was in February. (Number of tests attempted is shown in Table 3).

Chart 7: Number of Completed Breath Tests by Month

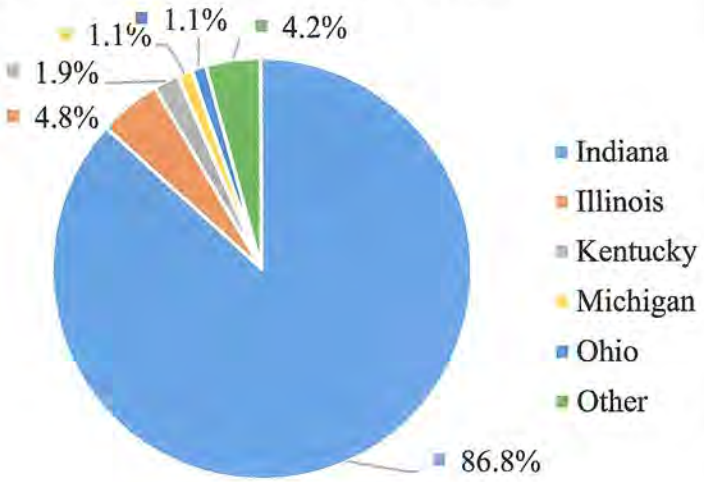


The six counties with the greatest number of attempted breath tests have remained consistent, with few exceptions, over the last six years. For each of the last five years, Lake County has had the highest number of attempted breath tests. Marion County had the highest number of attempted breath tests in 2015, but the numbers of attempted tests in Marion County have decreased each year since then. The ten counties with the most attempted breath tests in 2020 account for approximately 50% of all 2020 attempted breath tests.

Table 3: County and Number of Subject Tests Attempted

Lake	1883	Hancock	152	Boone	62	Carroll	40
Allen	1140	Jackson	123	Kosciusko	62	Jennings	40
Hamilton	586	Cass	117	Lawrence	62	Pike	40
Elkhart	568	Delaware	112	Franklin	59	Martin	36
Porter	565	Jasper	106	Owen	59	Gibson	35
Hendricks	405	Adams	103	Sullivan	58	Fayette	33
Marion	403	Huntington	101	Putnam	57	Switzerland	33
Clark	401	Henry	92	Newton	55	Crawford	29
Johnson	328	Dubois	91	Clinton	54	Jefferson	28
Vanderburgh	306	White	90	Shelby	54	Warren	27
LaPorte	296	Bartholomew	89	Scott	53	Benton	25
Monroe	248	Spencer	86	Decatur	52	Ripley	25
Madison	242	Warrick	86	Greene	52	Brown	23
St. Joseph	238	Clay	84	Harrison	51	Perry	21
Howard	235	Miami	82	Daviess	50	Randolph	20
Floyd	215	Parke	81	Marshall	48	Union	18
Tippecanoe	207	Montgomery	77	Noble	47	Ohio	17
Dearborn	199	La Grange	71	Washington	47	Blackford	10
Whitley	183	Wabash	70	Tipton	46	Rush	9
Vigo	176	Wells	70	Jay	45	Fulton	7
De Kalb	160	Fountain	67	Orange	44	Wayne	5
Steuben	153	Morgan	67	Vermillion	44	Pulaski	4
Grant	152	Knox	63	Posey	43	Starke	4

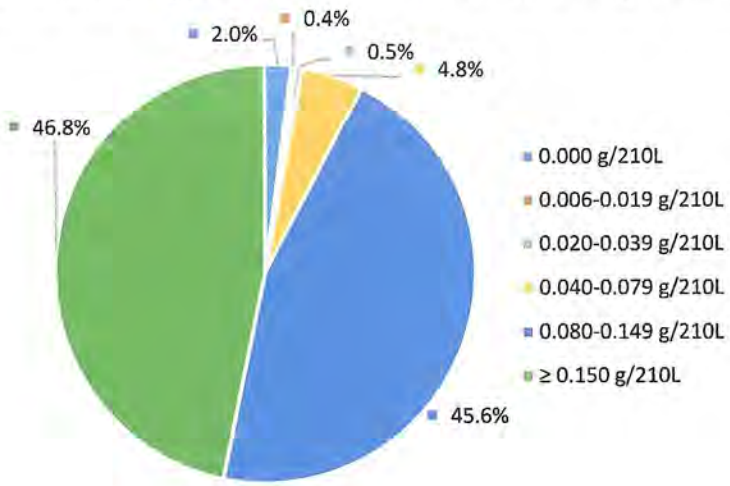
Chart 8: State of Issued Driver License



Of the subjects tested in 2020, 86.8% had licenses from Indiana, 4.8% from Illinois, 1.9% from Kentucky, 1.1% each from Michigan and Ohio, and the remaining 4.2% were from other states and countries. These numbers are consistent with those reported since 2016, when tracking of this information began.

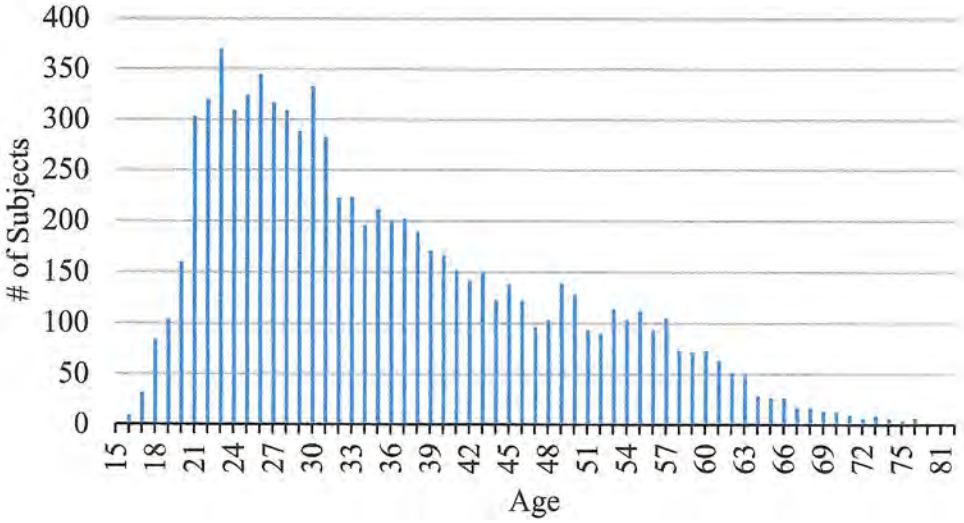
Of the subjects whose breath tests resulted in at least two reported breath alcohol concentrations, approximately 7.7% had results between 0.000 and 0.079 g/210 L of breath; 45.6% had results between 0.080 and 0.149 g/210 L of breath, and 46.8 % had results greater than or equal to 0.150 g/210 L of breath, as indicated in Chart 9. The number of subjects with breath alcohol concentrations greater than 0.150 g/210 L of breath was slightly higher in 2020 than in 2019, while the number of subjects with breath alcohol concentrations between 0.080 and 0.149 g/210 L of breath is slightly lower. The number of subjects with a 0.00 breath alcohol concentration was consistent with 2019.

Chart 9: Subject Breath Alcohol Test Results by Selected Ranges

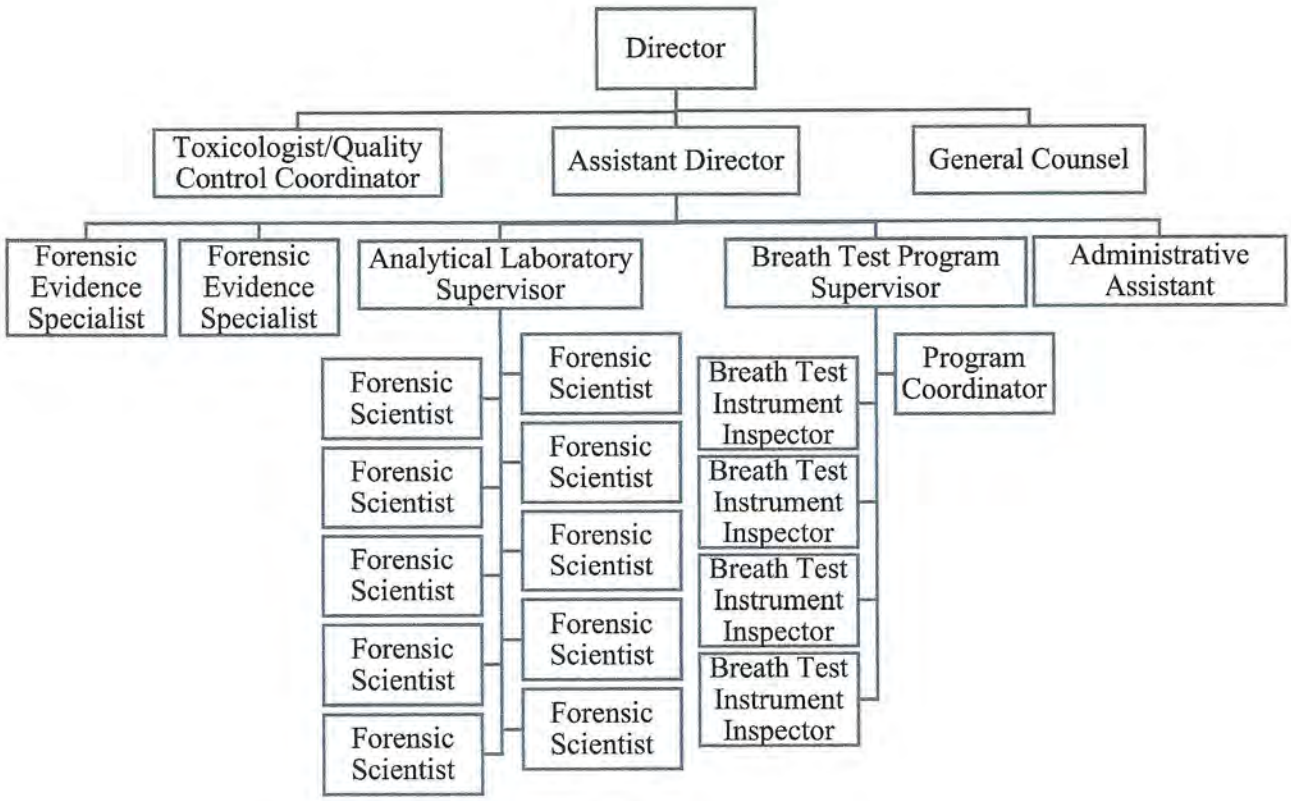


As shown in Chart 10, the subjects tested on the Intox EC/IR II evidentiary breath test instrument were between 15 and 82 years of age, with the greatest number of subjects at 23 years of age. Subjects under age 21 constituted approximately 5% of all subjects tested in the 2020 distribution, as compared to 3.8% in 2019, 4.4% in 2018, and 4.6% in 2017.

Chart 10: Number of Breath Alcohol Test Subjects by Age



Organizational Chart



Contact Information:

Indiana State Department of Toxicology
550 W. 16th Street, Suite A
Indianapolis, IN 46202-2203

Web: www.IN.gov/isdt

General agency number	(317) 921-5000
Fax	(317) 925-9430
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Assistant Director	Christina Beymer, Ph.D. (317) 921-5005 cbeymer@isdt.IN.gov
General Counsel	Teri Kendrick (317) 921-5002 tkendrick@isdt.IN.gov
Forensic Toxicologist Quality Control Coordinator	Sheila A. Arnold, Ph.D. (317) 921-5003 sarnold1@isdt.IN.gov
Analytical Lab Supervisor	Stephen A. Davis, Ph.D. (317) 921-5005 stdavis@isdt.IN.gov
Breath Test Program Supervisor	Dana Bors, Ph.D. (317) 921-5008 dbors@isdt.IN.gov

Appendix I

Forensic Needs - ISP

Medical Examiners Feasibility Study

Forensic Laboratories Report

Indiana State Police Department

Laboratory Division

Background: The Executive Reorganization Act of 1933 established the Indiana State Police Department. The Act created a bipartisan State Police Board to oversee and review policies and procedures in fulfillment of statutory requirements. Three years later the Laboratory was created with a mandate to provide forensic science services to the criminal justice system across the State.

Under the direction of a Division Commander, the Laboratory Division is organized into (5) sections that include Biology, Chemistry, Comparative Sciences, Crime Scene Investigation and Management Support. The Division receives evidence and conducts testing in one of (4) Regional Laboratories which are in Lowell, Ft. Wayne, Evansville, and Indianapolis.

In 2020 the Laboratory Division accepted 24,048 cases and completed 22,395 requests.

The Fiscal Year 2021 budget for the Laboratory Division is embedded in the Departments overall budget and is $13,461,067.

Requisite Needs: The Laboratory Division is currently in the process of building (3) new facilities in Lowell, Ft. Wayne, and Evansville as part of a comprehensive capital improvements program. As part of this plan, additional staffing will be required and is, in fact, currently being addressed by the Department.

There are no new services under consideration currently.

Accreditation/ Certification: The Laboratory Division of the Indiana State Police Department received national accreditation from the American Society of Crime Laboratory Directors/ Laboratory Accreditation Board in 1991. Continuing to maintain its accreditation, the Division is currently accredited by the American National Standards Institute (ANSI) National Accreditation Board.

Approximately 68% of the Forensic Scientists are certified by a forensic science organization such as the American Board of Criminalistics, American Board of Forensic Document Examiners, Association of Firearms and Toolmark Examiners and International Association of Identification.

All of the Crime Scene Investigators are certified by the Indiana Law Enforcement Academy.

Annual Report: See attached.

INDIANA STATE POLICE
LABORATORY DIVISION

2020 ANNUAL REPORT

"The Indiana State Police Laboratory Division values integrity, service, competency, transparency, and accountability in all of our actions."

– Major Steven D. Holland, Laboratory Division Commander

FOREWORD

Without question, our 2020 year was nothing like what any of us have ever experienced. Our Governor, Eric Holcomb, declared a public health crisis for Indiana in March in response to the coronavirus (COVID-19) pandemic. As the pandemic continued, Indiana operated in a public health crisis status with numerous restrictions placed and adjusted throughout the year. Being fluid toward accepting change became the norm.

On March 15, 2020, I received a phone call informing that one of our staff had tested positive, which was the first case within the Laboratory Division. At that point, things immediately changed for all of us. We transitioned from providing precautionary awareness, guidance, and information to taking workplace actions to best serve our staff. Due diligence was engrained into laboratory operations with social distancing, shift scheduling, as well as the many other necessary precautions that we still practice today. The attitudes and work efforts of our staff have been, and continue to be, nothing short of remarkable throughout the pandemic.

Deliberate decision making toward ensuring a safe workplace to allow for our work to continue became the norm. Newly found partnerships with the many professionals at the Indiana State Department of Health, Centers for Disease Control and Prevention, and our Governor's COVID-19 Task Force drove best practice decisions, and the guidance we received from these outstanding individuals will forever be appreciated.

The Laboratory Division was, and continues to be, considered an essential government service provider during the pandemic. It was an accomplishment that all our laboratory services continued uninterrupted in 2020, which is a testament to the character and dedication of our staff. It was a readily accepted fact that others depended upon our work during the pandemic. The services provided by the Laboratory Division in 2020 aided the criminal justice system with critical information for charging decisions, investigative leads, and outcomes that impacted people's lives.

Because of distancing, shifting, and other precautionary measures implemented to ensure a safe workplace, our efficiency did decrease, but we managed to stay fully functional. We experienced interruptions in the nation's supply chain for personal protective equipment and other analytical related supplies as the demands for these items were prioritized to COVID-19 testing laboratories. These matters also negatively impacted our production capabilities. Our contributing agencies collaborated with our staff to prioritize case submissions with more scrutiny, but our 2020 submissions received for analysis were consistent with prior years, and at a time in which we had to employ less efficient production capacities to ensure we remained operational.

A special note in this foreword is required for one of the field components within our Laboratory Division - our Crime Scene Investigations Section (CSIs). Unlike within the confines of our analytical laboratory spaces, these dedicated CSIs, by virtue of their job duties and responsibilities, did not always find themselves in circumstances in which proper social distancing could be achieved. The number of crime scenes investigated by our CSIs increased in 2020 as compared to previous years, and that fact is likely a reflection of the crime statistics that may be attributable to the circumstances surrounding the COVID-19 pandemic in society.

I cannot begin to express how much respect that I have for all our staff. It was a rare exception that I heard negative feedback about the necessary workplace safety matters we had to put in place. Instead, I received openness, understanding, and a willingness to self-sacrifice in order to accomplish a greater good.

Throughout 2020, we all had to navigate through personal and professional matters associated with the COVID-19 crisis. There is little doubt that 2020 was "different." To that end, you will find an overview of the Laboratory Division's activities during 2020 in the following sections of this, our 2020 annual report.

Major Steven D. Holland
Laboratory Division Commander

Laboratory Division

Since its inception in 1936, the mission of the Laboratory Division is "to provide client agencies accurate, reliable, and timely crime laboratory services within the resources provided, and to manage the evidence security system of the Indiana State Police Department." Toward these ends, in 2020 the Laboratory Division processed 1,388 crime scenes, issued reports for 22,395 laboratory cases completed, conducted 444 polygraph examinations, and secured over 360,000 items of evidence.

The Laboratory Division is organized into five sections: Biology, Chemistry, Comparative Science, Crime Scene Investigations, and Management Support. The Biology Section consists of Serology, DNA, and CODIS (Combined DNA Index System). The Chemistry Section consists of the Drug Unit and the Microanalysis Unit. The Comparative Science Section consists of the Firearms Unit (including Integrated Ballistics Identification System or IBIS), the Latent Print Unit (including Automated Fingerprint Identification System or AFIS), and the Document Unit. Crime Scene Investigations Section consists of the Crime Scene Investigators and the District Evidence Clerks. Management Support Section includes the Laboratory Managers, the Regional Laboratory Evidence Clerks, and staff from the Photography, Laboratory Information Management System/ Information Technology (LIMS/IT), and Polygraph Units. The last two pages of this report provides the Division's organizational structure and contact information.

The Laboratory Division accepts evidence associated with active criminal investigations for analysis at four Regional Laboratory locations - Evansville, Fort Wayne, Indianapolis, and Lowell. The four Regional Laboratories have been accredited since 1991. The Laboratory Division is accredited by American National Standards Institute (ANSI) National Accreditation Board (ANAB).

INDIANA STATE POLICE
LABORATORY DIVISION

MISSION STATEMENT

To provide client agencies accurate, reliable and timely crime laboratory services within the resources provided and to manage the evidence security system of the Indiana State Police Department.

Division Commander

May 1, 2015
Date

ANAB

CERTIFICATE OF ACCREDITATION

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

This is to certify that

Indiana State Police Laboratory Division

has been assessed by ANAB
and meets the requirements of

ISO/IEC 17025:2017

ANAB 17025:2017 Forensic Science Testing and Calibration Laboratories Accreditation Requirements:2018
FBI Quality Assurance Standards for Forensic Testing Laboratories:2011
FBI Quality Assurance Standards for DNA Databasing Laboratories:2011

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-0132
Valid to: 06/30/2021

Pamela L. Sale
Vice President, Forensics

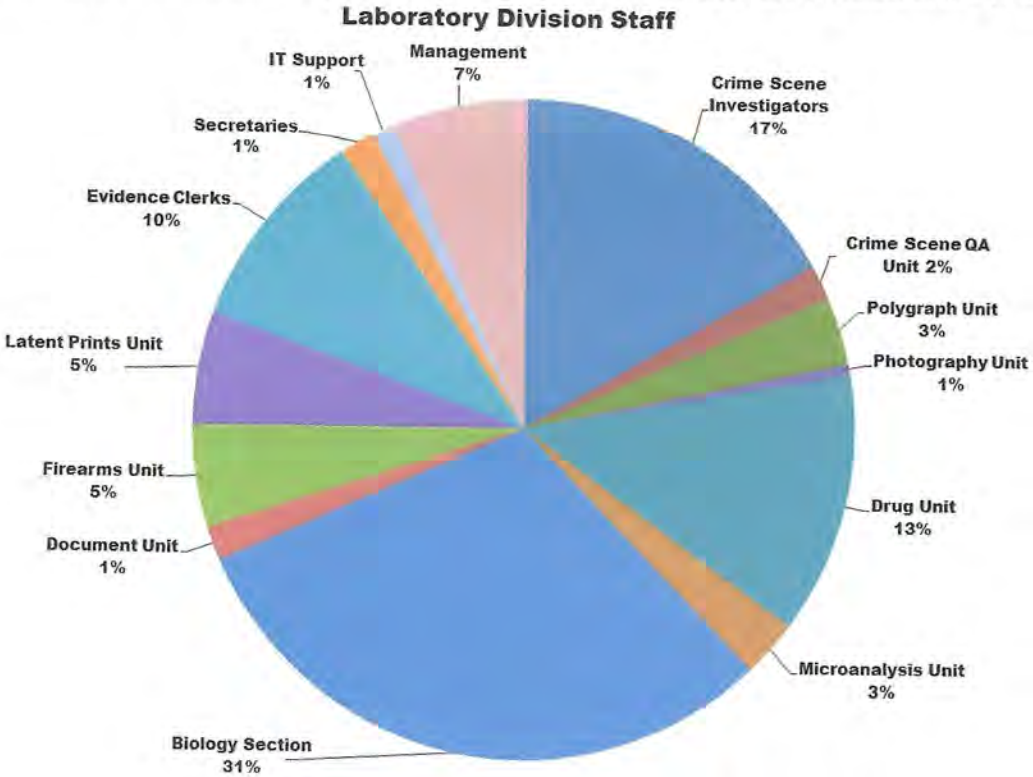
Staffing

Approximately 68% of the Forensic Scientists are certified by a forensic organization. These organizations include the American Board of Criminalists; American Board of Forensic Document Examiners; Association of Firearm and Toolmark Examiners; or International Association of Identification. All the Crime Scene Investigators are certified by the Indiana Law Enforcement Training Board.

The Laboratory Division's personnel are also members in forensic organizations, to include individuals holding office or working on committees. These organizations include:

- American Academy of Forensic Sciences
- American Association of Police Polygraphists
- American Chemical Society
- American Polygraph Association
- American Society of Crime Laboratory Directors
- American Society of Questioned Document Examiners
- American Society of Trace Evidence Examiners
- Association for Crime Scene Reconstruction
- Association of Firearm and Toolmark Examiners
- Association of Forensic Quality Assurance Managers
- Clandestine Laboratory Investigating Chemists
- Indiana Division of the International Association for Identification
- Indiana Polygraph Association
- Illinois Association of Property and Evidence Managers
- International Association for Identification
- Midwestern Association of Forensic Scientists
- Organization of Scientific Area Committees

At the end of 2020, the Laboratory Division employed 180 individuals providing analytical and support services. Over 90% of the Laboratory Division personnel are directly involved in collecting, maintaining, and/or analyzing evidence. The "Laboratory Division Staff" chart below details the distribution of the staff.



Types of Crimes and Requesting Agencies

The four Regional Laboratories provide forensic services at no charge to federal, state, county, and local agencies throughout Indiana.

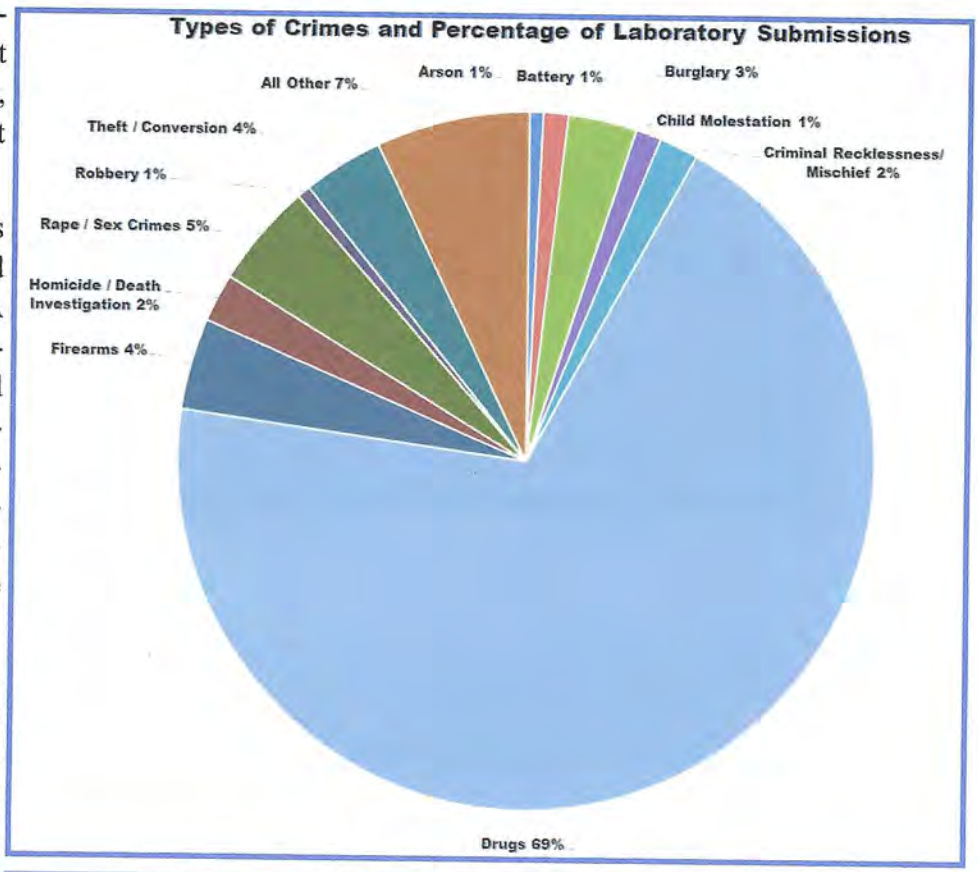
These services include tests for forensic biology/DNA and maintenance of the state's DNA database, identification of controlled substances, firearms and toolmarks, latent prints, questioned documents, and trace evidence examinations. The Laboratory Division also provides polygraph examinations and crime scene investigations upon request.

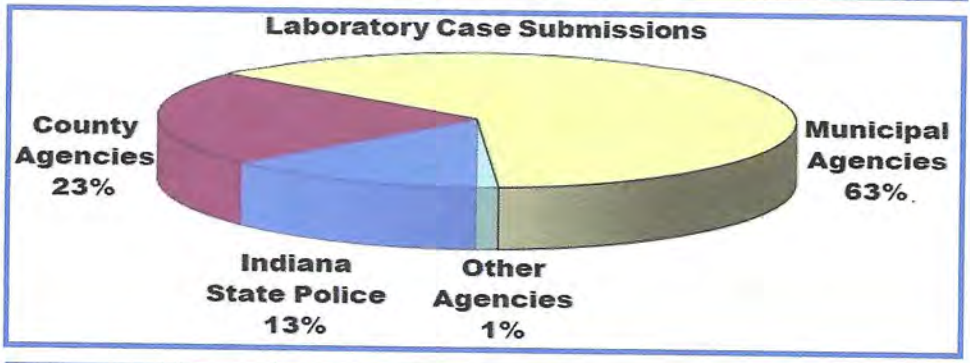
The Laboratory Division received 24,048 new cases for analysis in 2020. Crime Scene Investigators responded to and worked 843 investigations involving 1,388 different crime scenes, and the Polygraph Unit conducted 181 polygraph tests in criminal cases during 2020.

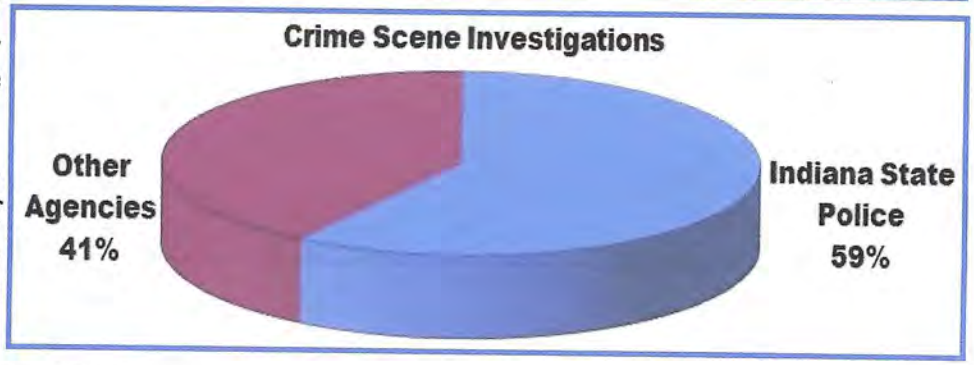
The chart to the upper right shows the types of crimes and percentages submitted to the Regional Laboratories in 2020.

As shown in the "Laboratory Case Submissions" chart, the majority of cases for analysis were submitted by municipal agencies.

The "Crime Scene Investigations" chart shows that over half of the crime scene investigations were completed for the Indiana State Police.

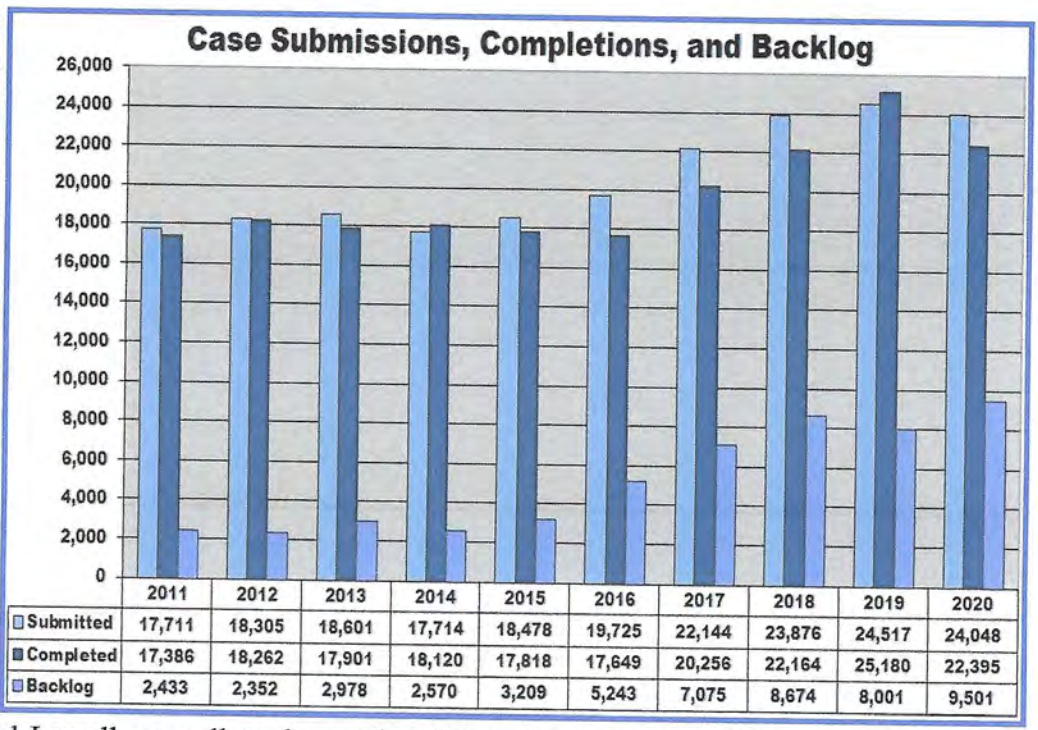






Case Submissions, Completions, & Backlog

As shown in the "Case Submissions, Completions, and Backlog" graph to the right, the Laboratory Division received 24,048 cases and completed 22,395 cases in 2020. The Laboratory Division's goal is to have 90% of backlog cases analyzed in 45 days or less from the date of submission. The backlog is defined as any case submitted that has not been completed. The average turnaround time at the end of 2020 for completing a case was 121 days, which is down from 127 days in 2019. The aging laboratory conditions at Evansville, Fort Wayne, and Lowell, as well as the continued increase in drugs and firearms submissions received for analysis, continued to negatively affect the turnaround times of the laboratory system.



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Submitted	17,711	18,305	18,601	17,714	18,478	19,725	22,144	23,876	24,517	24,048
Completed	17,386	18,262	17,901	18,120	17,818	17,649	20,256	22,164	25,180	22,395
Backlog	2,433	2,352	2,978	2,570	3,209	5,243	7,075	8,674	8,001	9,501

In summer of 2017, the Indiana State Police was allocated funding to be used for capital improvement projects at Evansville, Fort Wayne, and Lowell Regional Laboratories. Construction commenced in 2020 at Fort Wayne and is scheduled to be completed in 2021 (see photos below). The start of construction at Lowell and Evansville has not yet been scheduled but plans for those facilities are continuing.

Regional Laboratories

All four of the Regional Laboratories provide analysis in Biology, Drugs, Firearms, and Latent Prints. Microanalysis (Trace) and Document examinations are only performed at the Indianapolis Regional Laboratory. The 2020 case submissions, completions, and backlog at the four Regional Laboratories are shown in the three tables below. For operational efficiency, cases are routinely transferred among Regional Laboratories.

Submissions

	Evansville	Fort Wayne	Indianapolis	Lowell	Totals
Biology	346	186	3,374	486	4,392
Documents	0	0	35	0	35
Drugs	1,627	3,047	8,267	1,798	14,739
Firearms	597	1,169	1,653	399	3,818
Latent Prints	240	205	251	163	859
Trace	0	0	205	0	205
Totals	2,810	4,607	13,785	2,846	24,048

Completions

	Evansville	Fort Wayne	Indianapolis	Lowell	Totals
Biology	339	187	3,263	495	4,284
Documents	0	0	36	0	36
Drugs	1,003	2,299	8,840	1,697	13,839*
Firearms	575	1,109	1,169	335	3,188
Latent Prints	277	188	200	167	832
Trace	0	0	216	0	216
Totals	2,194	3,783	13,724	2,694	22,395

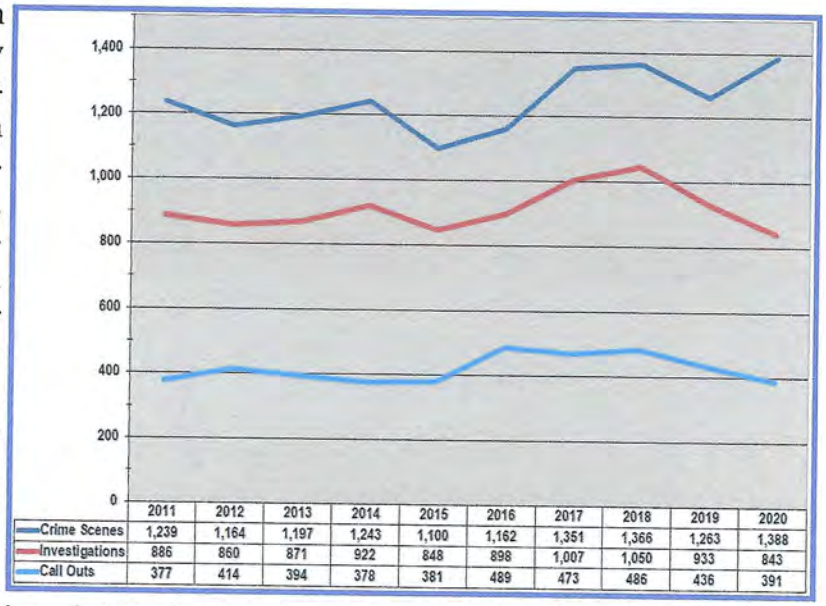
*** The cases analyzed include 8,121 cases that were tested and 3,165 cases administratively withdrawn. An additional 2,553 cases were completed by outsourcing to a contracted accredited laboratory.**

Backlog

	Evansville	Fort Wayne	Indianapolis	Lowell	Totals
Biology	47	31	731	48	857
Documents	0	0	13	0	13
Drugs	1,020	1,821	3,639	802	7,282
Firearms	71	365	611	110	1,157
Latent Prints	16	47	83	24	170
Trace	0	0	22	0	22
Totals	1,154	2,264	5,099	984	9,501

Crime Scene Investigation

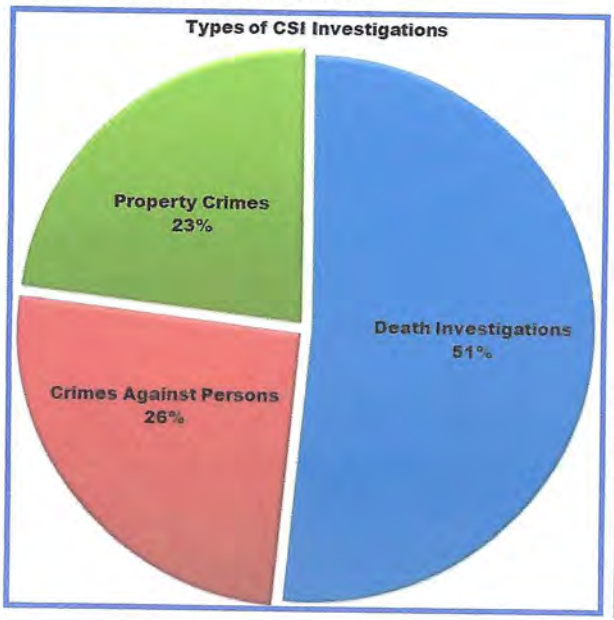
Crime Scene Investigators (30 staff), when requested by local, state, and federal law enforcement agencies, respond to scenes, 24 hours a day, seven days a week anywhere in Indiana. Services provided include documenting the crime scene, identification, collection, and packaging potential evidence, reconstructing the events of the crime, bloodstain pattern analysis, and three-dimensional (3D) laser scanning. In 2020, the CSIs worked 843 investigations involving 1,388 crime scenes, and were called out 391 times outside of normal business hours. Sixty-two crime or crash scenes were documented using a 3D scanner. As shown in the chart below, over half of the scenes worked during 2020 were death investigations. During 2020, the CSIs investigated 144 shooting incident scenes that included 55 officer involved shootings. In 2020, CSIs also assisted with the distribution of personal protective equipment (PPE) and COVID-19 testing supplies throughout Indiana.



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Crime Scenes	1,239	1,164	1,197	1,243	1,100	1,162	1,351	1,366	1,263	1,388
Investigations	886	860	871	922	848	898	1,007	1,050	933	843
Call Outs	377	414	394	378	381	489	473	486	436	391

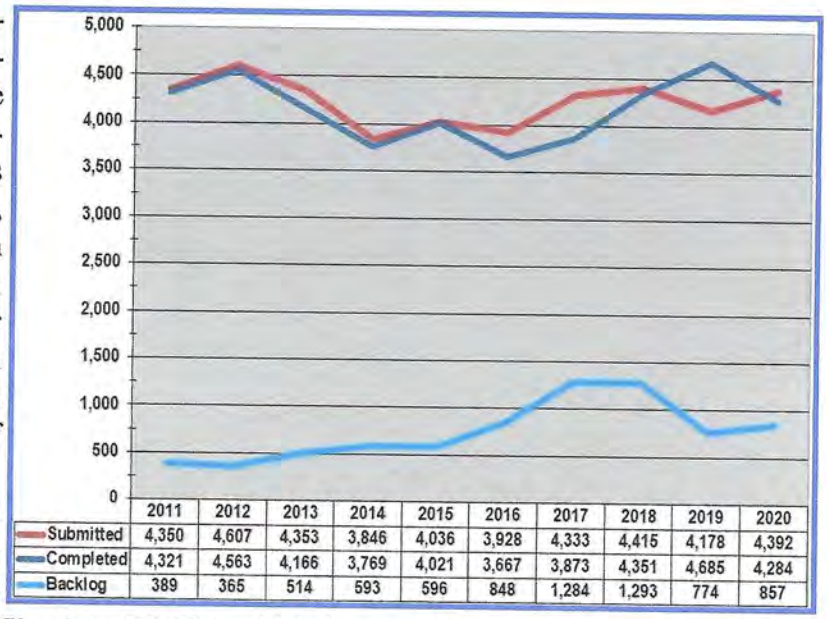
The Section is active in the forensic community by participating in the Association for Crime Scene Reconstruction (ACSR) and the Indiana Division of the International Association for Identification (IN IAI).

In 2020, the CSIs attended a training class on the use of new handheld Alternate Light Source (ALS) that included hands-on practical competency test exercises (see photo below). The ALS allows the CSI to evaluate the scene for the presence of body fluids, latent impressions treated with fluorescent fingerprint powder, and trace material such as fibers.



Biology Section

The Biology Section (56 staff) is organized into four casework units, plus the Combined DNA Index System (CODIS) Unit. The Section conducts analysis of biological samples including identification of body fluids (serology), nuclear and Y-STR DNA analysis, forensic relationship tests, bloodstain pattern analysis, DNA analysis of offender samples, and searches of the offender database for matching profiles. In 2020, the Section completed 4,284 cases and 4,392 cases were submitted. The backlog was 857 at the end of 2020.



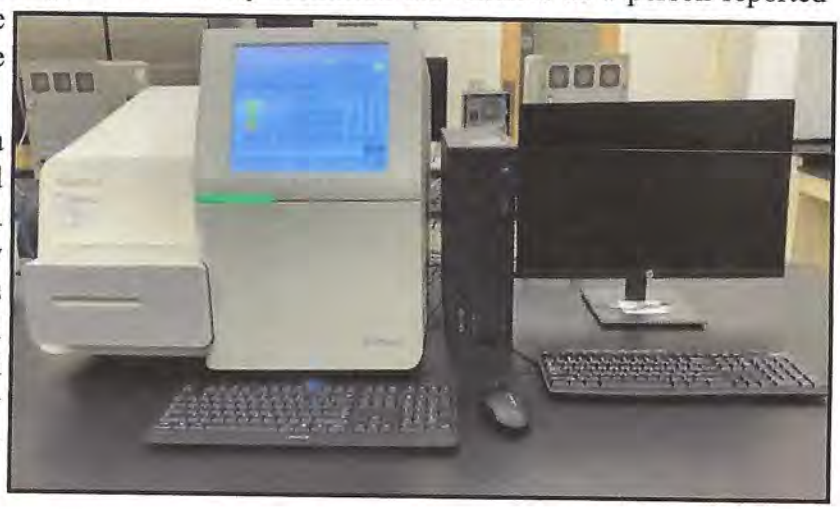
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Submitted	4,350	4,607	4,353	3,846	4,036	3,928	4,333	4,415	4,178	4,392
Completed	4,321	4,563	4,166	3,769	4,021	3,667	3,873	4,351	4,685	4,284
Backlog	389	365	514	593	596	848	1,284	1,293	774	857

In 2020, the four Indiana State Police Regional Laboratories plus the Indianapolis Marion County Forensic Services Agency entered approximately 1,500 crime scene profiles into CODIS, which is more than any previous year. As a result of these efforts, a total of 814 separate criminal investigations were aided via CODIS during 2020 with type of hits shown in the chart to the left. To date 8,996 investigations have been aided by the Indiana CODIS program. During 2020, more than 22,000 samples from previously untested offenders were submitted to the Laboratory Division. These samples were analyzed and entered into the database with an average turnaround time of seven days from receipt to database entry.

CODIS Hit Type	Hits
National Forensic	16
National Offender	198
State Forensic	19
State Offender	637
2020 Total	870

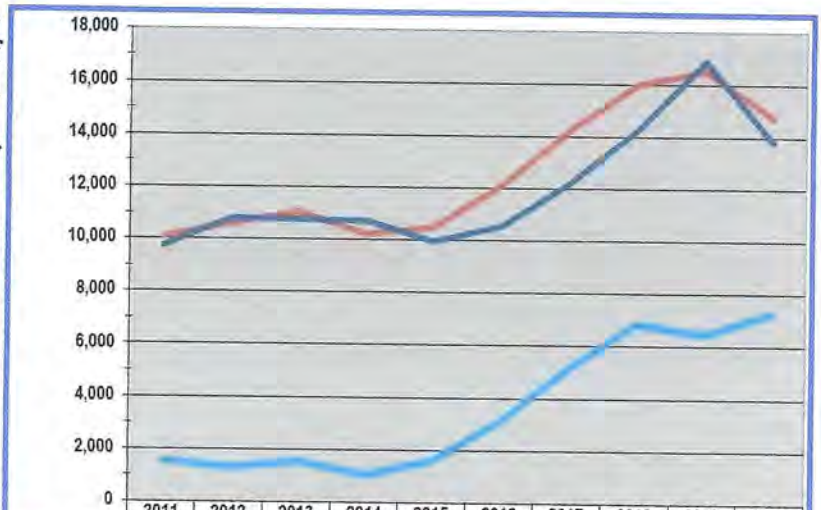
In 2020, CODIS helped solve 13 unidentified remains cases (11 Indiana cases and one each from Illinois and North Carolina). The highest number of these identifications in any previous year was six. Analysis of one case with partial skeletal remains not only determined that it was not linked to other partial remains found nearby, but ultimately identified the remains as a person reported missing in Louisville, KY in 1991. These cases help grieving families to have some closure in dealing with missing loved ones.

In 2020, the Biology Section purchased a MiSeq instrument (photo to the right) and initiated the validation. This new DNA sequencing technology will ultimately allow the Section to test additional DNA markers that have the potential to identify physical characteristics, determine ancestry, and generate DNA profiles for genetic genealogy which will provide additional investigative leads for unsolved cases.



Drug Unit

The Drug Unit (23 staff) identifies controlled substances, non-controlled drugs of abuse, clandestine laboratory samples, and diluent materials found in drug preparations. During 2020, the Unit completed analysis of 8,121 cases and 3,165 cases were administratively withdrawn because those cases were adjudicated prior to testing. In addition, 2,553 cases were completed by outsourcing to a contracted accredited laboratory, which increased the total number of cases with a completion designation within the laboratory to 13,839 cases.

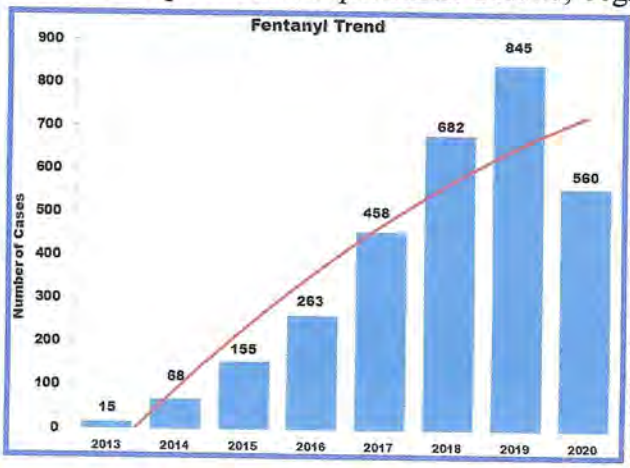


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Submitted	10,112	10,595	11,068	10,222	10,506	12,122	14,266	15,992	16,497	14,739
Completed	9,740	10,833	10,762	10,742	9,951	10,576	12,213	14,255	16,875	13,839 [1]
Backlog	1,557	1,293	1,581	1,056	1,616	3,134	5,168	6,869	6,501	7,282

[1] The cases analyzed include 8,121 cases that were tested and 3,165 cases administratively withdrawn. An additional 2,553 cases were completed by outsourcing to a contracted accredited laboratory.

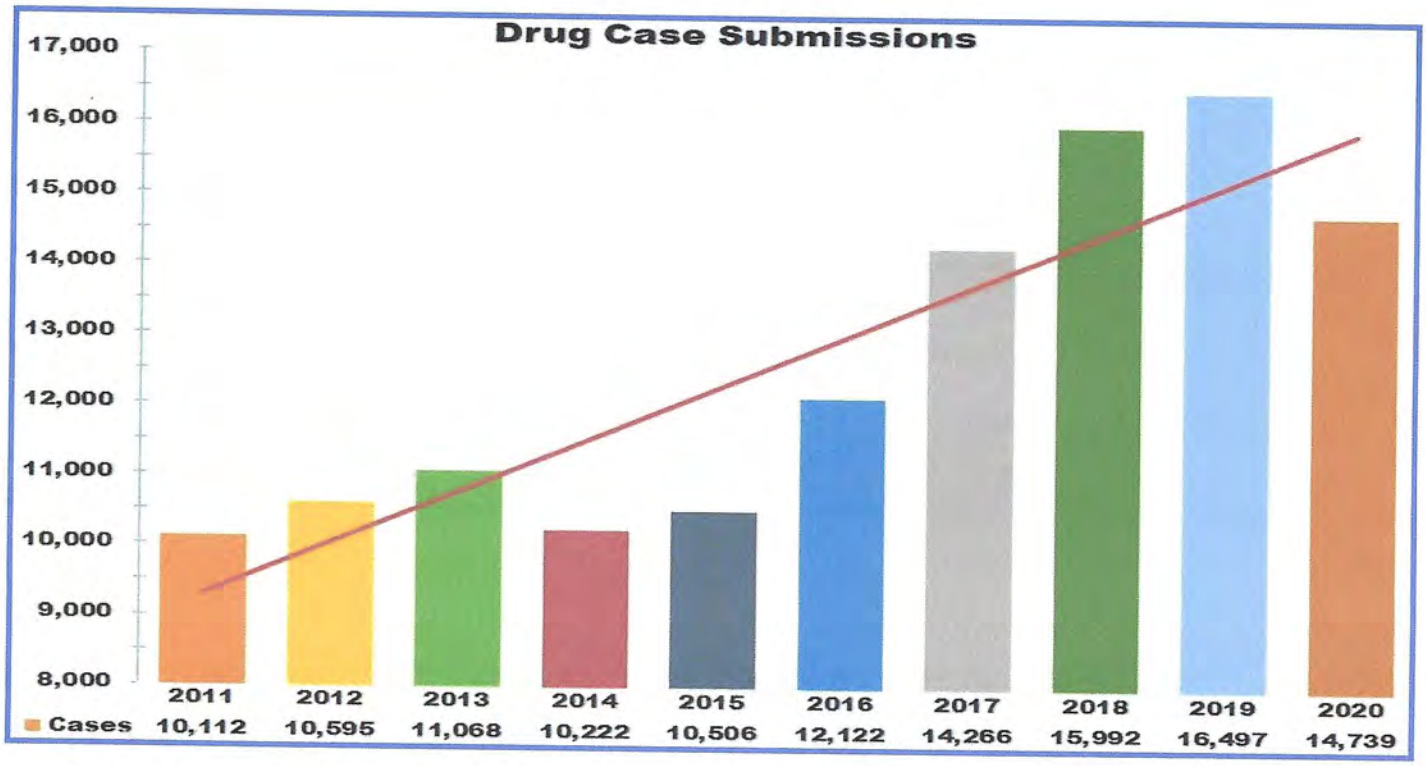
In 2020, the Drug Unit received 14,739 cases, which is 61% of the total cases submitted to the Laboratory Division. Although drug submissions decreased in 2020, the submissions remains high when compared to pre-2017 numbers (see "Drug Case Submissions" graph on page 11). The backlog increased in 2020 due to a decrease in cases analyzed caused by retirements of three drug analysts, as well as implementation of workplace safety measures related to COVID-19 that decreased efficiency.

While the goal of the Laboratory Division is to complete 90% of the case submissions in 45 days, the drug backlog situation caused an increase in the Drug Unit turnaround time to an average of nearly 7 months. In response, the Laboratory Division implemented a multi-faceted approach to reduce the backlog and to ensure the increasing turnaround times for completions do not hinder the criminal justice system. First, the Indiana State Police (ISP) is moving forward with the design and construction of new laboratory facilities in Evansville, Fort Wayne, and Lowell. Construction commenced in 2020 at Fort Wayne and is scheduled to be completed in 2021. The start of construction at Lowell and Evansville has not yet been scheduled but plans for those facilities are continuing. These new facilities will allow for the hiring of additional forensic scientists. The current buildings lack adequate space to support additional staff and necessary instrumentation, which significantly limits case production capabilities. Second, beginning in January 2020, as a stop-gap measure, the ISP contracted with the Miami Valley Regional Crime Laboratory in Dayton, Ohio, to outsource a portion of the backlogged drug cases for analysis. This outsourcing project is a short term measure and will be utilized, as funding allows, until such time as the new laboratories are constructed and operational to support the additional staff needed to meet the Laboratory Division's submission demands.

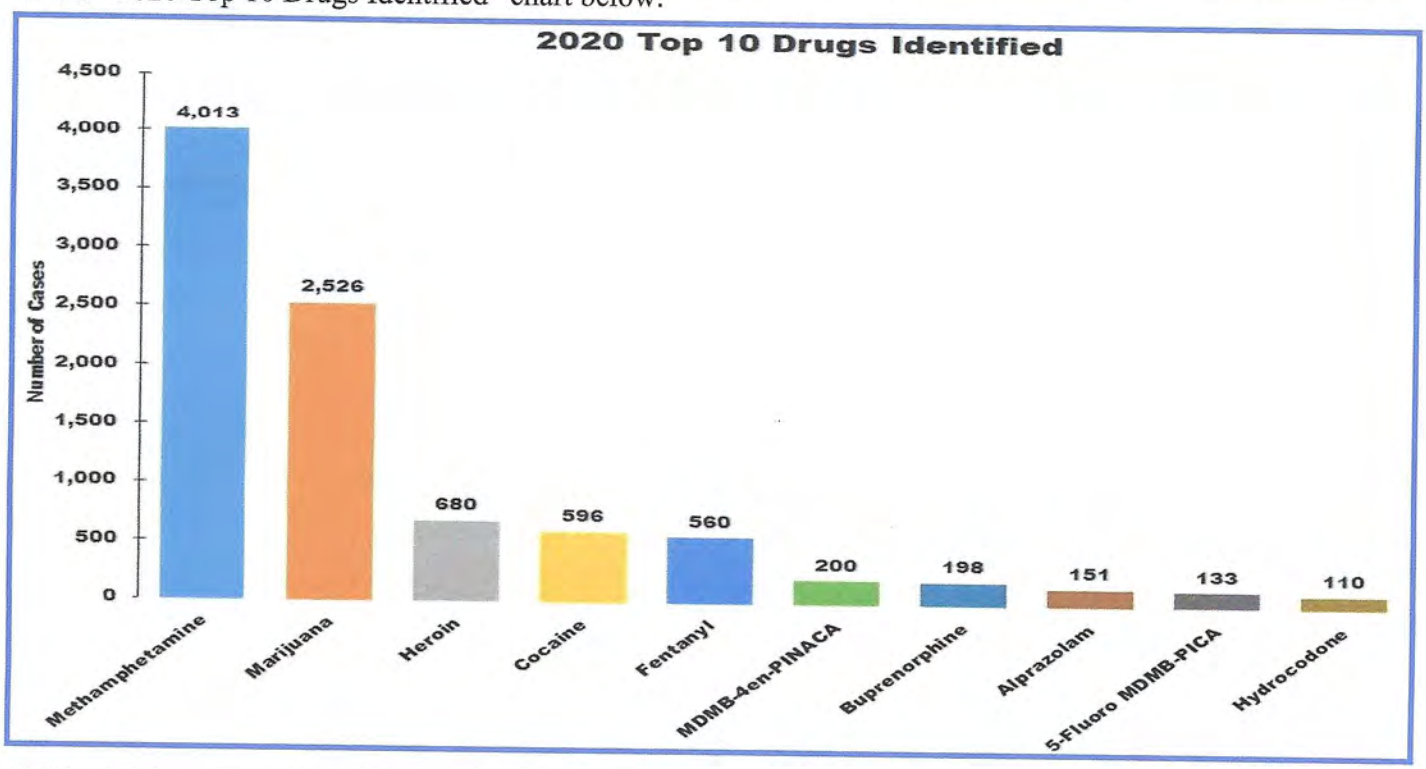


The number of Fentanyl related compounds submitted decreased from 845 in 2019 to 560 cases during 2020 (as shown in graph to the left). Fentanyl and related compounds also negatively impacted case completion due to the additional safety precautions required to analyze these types of cases.

Drug Unit

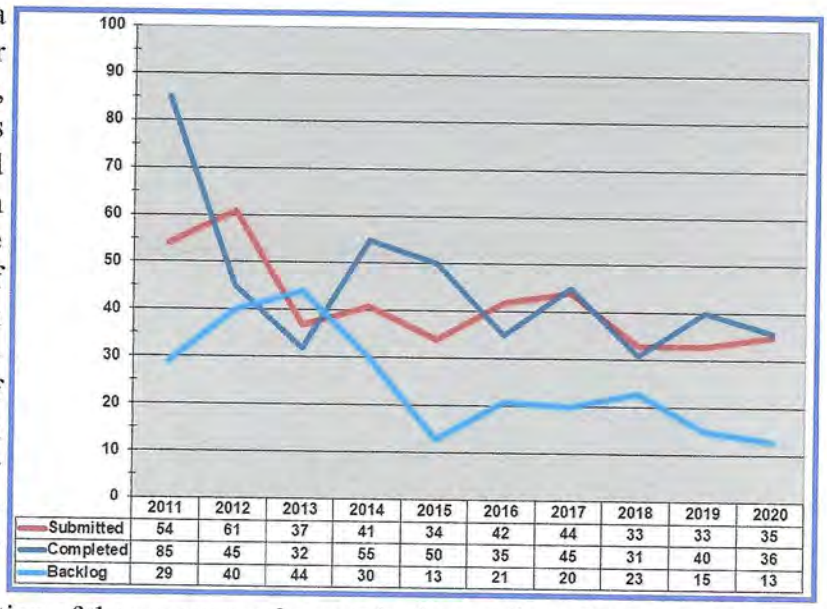


The top four drugs identified in 2020 were Methamphetamine, Marijuana, Heroin, and Cocaine, as shown in the "2020 Top 10 Drugs Identified" chart below.



Document Unit

The Document Unit (3 staff) performs a range of examinations in order to answer questions about the authorship, authenticity, and background of documents. Examinations include: the comparison of handwriting, hand printing, and signatures to known writing in order to identify or eliminate a subject as the writer; the development and decipherment of indented writing impressions; physical match examinations of torn, cut, or shredded documents; the classification and comparison of inks and writing instruments; the examination of printing processes to determine source or authenticity; detection of alterations, additions, deletions, or substitutions; decipherments of altered, erased, obliterated, charred, or water soaked documents; and the determination of the sequence of events in the creation of a document. The Unit also maintains a Robbery Note Reference Collection to search for similarities to other robbery notes.



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Submitted	54	61	37	41	34	42	44	33	33	35
Completed	85	45	32	55	50	35	45	31	40	36
Backlog	29	40	44	30	13	21	20	23	15	13

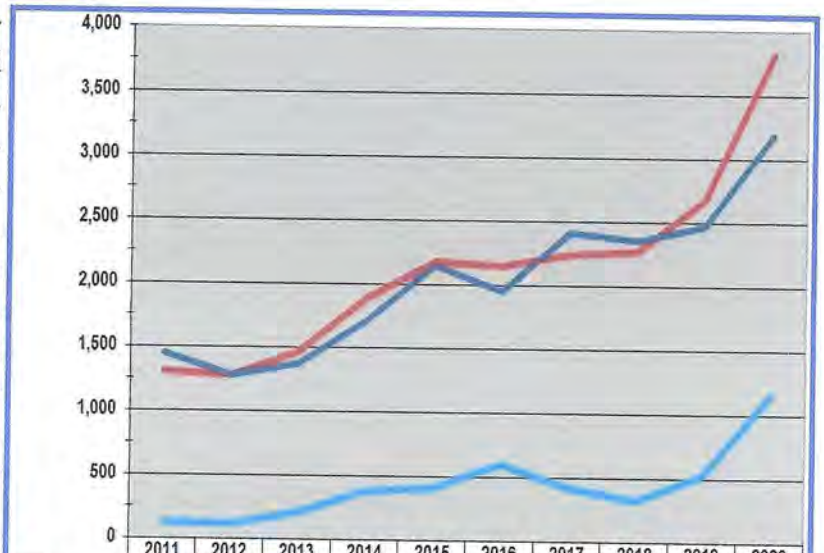
The Unit completed 36 cases in 2020 and received 35 cases, which included ten electronic submissions. At the end of 2020 the backlog was 13. During 2020, casework primarily focused on handwriting examinations. The types of investigations aided varied, for example: a forgery investigation of an aircraft bill of sale; numerous robberies; serial stalking; voter fraud; and witness intimidation in a death investigation.

Members of the Unit are active in the forensic community by participating in the American Board of Forensic Document Examiners (ABFDE), American Society of Questioned Document Examiners (ASQDE), and the Midwestern Association of Forensic Scientists (MAFS).

The Unit maintains the ASQDE Resource Center (http://www.asqde.org/resources/resource_center.html), which is one of the largest forensic document repositories in the world. A retired ISP Document Unit Supervisor serves as the curator. In 2020, high-density mobile storage was installed for the Resource Center (see photo to right). The Laboratory Division and ASQDE agreed to keep the Resource Center at the current location until at least 2028.

Firearms Unit

The Firearms Unit (9 staff) conducts comparison and identification of fired bullets and cartridge cases. The Unit also performs characterization of recovered ammunition components, function testing of firearms, examination and comparison of toolmark evidence, Integrated Ballistics Identification System (IBIS) database entry and inquiry for unsolved firearms related cases, muzzle to target distance determination, and serial number restoration. Members of the Unit also participate on the Superintendent's Advisory Committee on Firearms and Ammunition Selection by evaluating new firearms and ammunition for future procurement by the Indiana State Police Department.



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Submitted	1,314	1,277	1,474	1,892	2,177	2,146	2,242	2,272	2,681	3,818
Completed	1,450	1,284	1,376	1,714	2,145	1,949	2,415	2,356	2,471	3,188
Backlog	133	119	212	389	411	605	419	325	531	1,157

In 2020, the Firearms Unit worked 3,188 cases while receiving 3,818 cases, and had a backlog of 1,157 at the end of the year. Since 2012, firearms case submissions have tripled from 1,277 in 2012 to 3,818 in 2020. The construction of a new laboratory facility in Fort Wayne, as previously noted on page 6, will provide more analytical work space that will allow for the hiring of additional forensic scientists in the Firearms Unit to address the rising case submissions and backlog.

The Firearms Unit assisted law enforcement agencies by linking firearms related cases with 206 IBIS hits, as shown in the chart to the right. Only the Fort Wayne and Indianapolis Regional Laboratories perform IBIS examinations. Cases received at Evansville and Lowell requiring IBIS entry are transferred to Fort Wayne or Indianapolis.

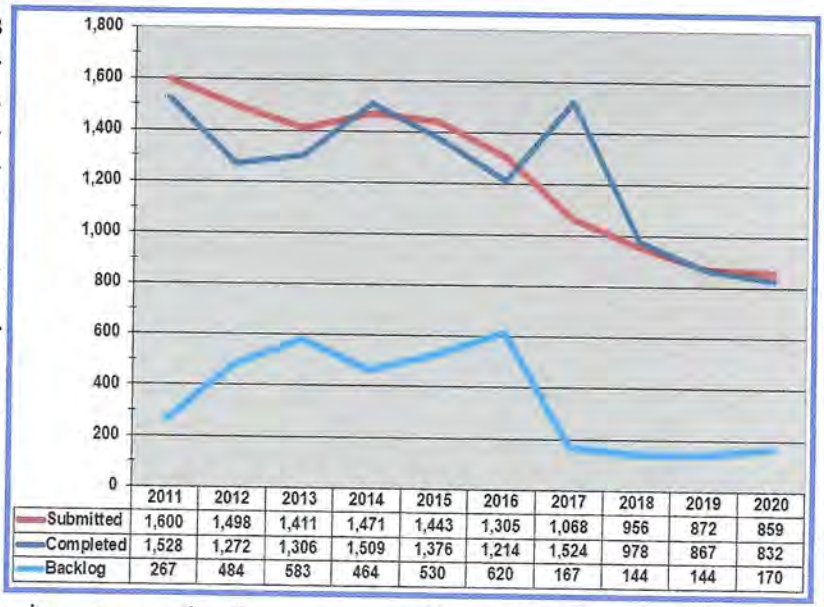
Regional Laboratory	Hits
Fort Wayne	107
Indianapolis	99
2020 Total	206

The Firearms Unit is active in the forensic firearms community with members participating in the Association of Firearm and Toolmark Examiners (AFTE), Organization of Scientific Area Committees (OSAC) Firearms and Toolmarks Subcommittee, and the National Integrated Ballistic Information Network (NIBIN) Users Conference.

During 2020, a member of the Firearms Unit participated in the creation of Firearms Process Maps, which was a collaboration between the National Institute of Standards and Technology (NIST) Forensic Science Research Program and OSAC in partnership with AFTE. The Firearms Process Maps captures details about the various procedures, methods and decision points most frequently encountered in the discipline of firearm examination and is intended to reflect current practices.

Latent Print Unit

The Latent Print Unit (10 staff) examines and compares unknown to known dermal friction ridge detail, which is found on fingers, palms, and soles of feet. Processing techniques include physical, chemical, and fluorescent development of latent print evidence. When a case is submitted without a suspect, the unknown fingerprints are entered into the state's Automated Fingerprint Identification System (AFIS) and the Federal Bureau of Investigation's Next Generation Identification (NGI) databases. Potential candidates are generated by the system, but the comparison, identification, and verification processes are performed by forensic scientists. The Unit can access all friction ridge archive files from AFIS/NGI for comparison purposes. This access streamlines the process and allows the examiners to acquire the exact exemplar needed for comparison.



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Submitted	1,600	1,498	1,411	1,471	1,443	1,305	1,068	956	872	859
Completed	1,528	1,272	1,306	1,509	1,376	1,214	1,524	978	867	832
Backlog	267	484	583	464	530	620	167	144	144	170

2020	Hits
AFIS	46
NGI	46
Total	92

In 2020, the Unit received 859 cases that included 115 electronic submissions, worked 832 cases, and entered 437 prints into AFIS and NGI with the number of hits shown in the table to the left. The backlog was 170 cases at the end of the year. The Unit assisted with 266 print identifications to confirm Combined DNA Index System (CODIS) hits. The Unit is active in the forensic community participating in the International Association for Identification (IAI) and the Indiana Division of IAI.

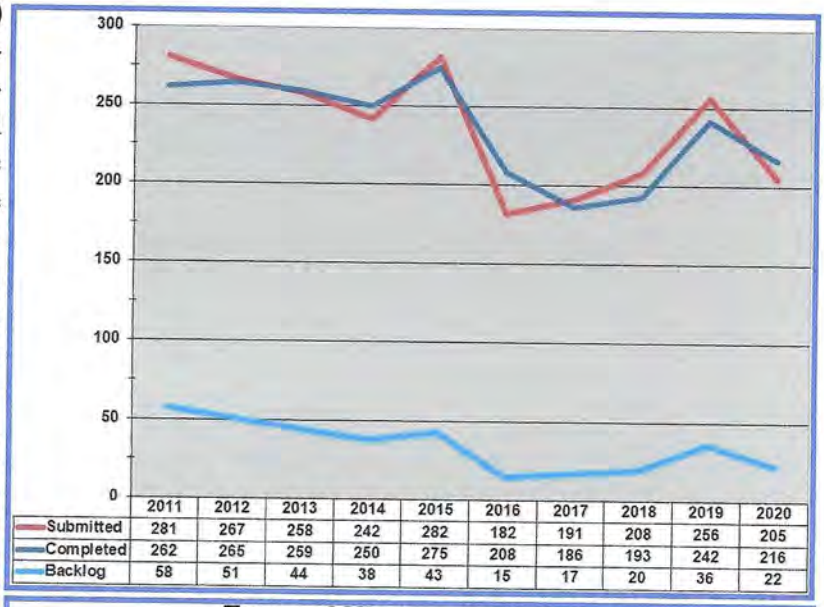
In 2020, the Laboratory Division continued accepting electronic evidence submissions of digital images for latent print or document examination with 125 total submissions, an 89% increase from 2019. Electronic evidence for examination can be submitted at esubmission@isp.in.gov with a completed Request for Laboratory Examination Form, and for files too large to be emailed, a secure file sharing website can be set up by the Laboratory Division. It is anticipated that electronic submissions will continue to rise as awareness increases. Over 60% of all latent print submissions are lifts or photographs, which could be submitted electronically.

During 2020, the Latent Print Unit assisted the Internet Crimes Against Children (ICAC) Unit of the Indiana State Police with a child molestation investigation. The case began with a tip from social media of a user sharing child exploitation imagery. Through the investigation, three images which contained potential child molestation were found on a suspect's email account that included cloud storage. The digital information in the photographs was used to determine the location where the photographs were originally taken, which was the suspect's former address. A digital image containing an adult's left palm and index finger was submitted for laboratory analysis. The latent print examination identified the suspect from the photo (see photo to the right).

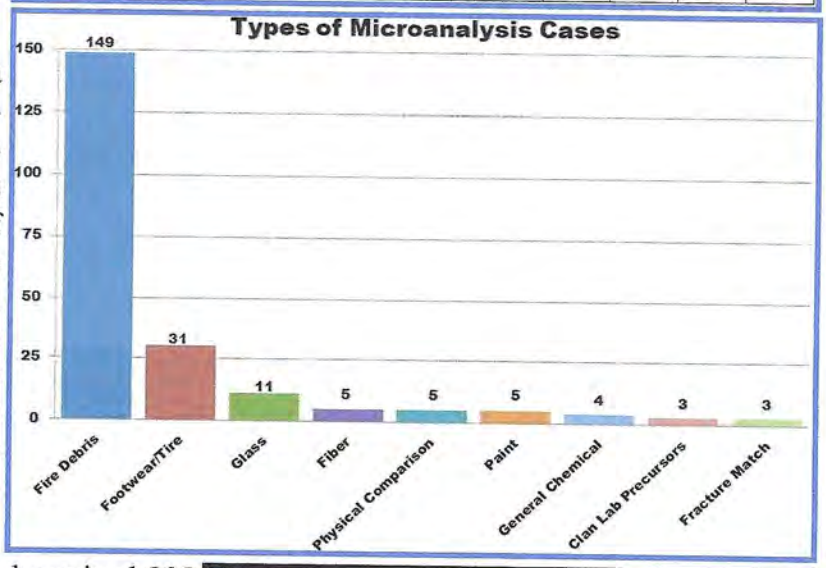
This is the second child sex crime case in which a digital image of a suspect's palms/fingers were identified by the Unit. Although this was not the first fingerprint identification using a digital image of fingers and/or palms, this case was the first time a latent print from a digital image was used to identify a suspect in an ICAC investigation in Indiana and the fourth time occurring in the country.

Microanalysis Unit

The Microanalysis (Trace) Unit (5 staff) performs analysis, comparison, and identification of automotive lamps, clandestine laboratory reagents, fibers, fire debris, footwear and tire impressions, glass, paints, plastics, safe insulation, tapes, and unknown materials. The Unit uses many different types of microscopes as well as analytical instrumentation to conduct examinations and comparisons in an effort to provide associative evidence. The Unit uses the SoleMate Footwear Print Identification System Footwear Print Expert (FPX). This system stores shoeprint sole patterns for reference. Footwear impressions recovered from crime scenes can be searched in FPX database to potentially identify a manufacturer of a shoe.



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Submitted	281	267	258	242	282	182	191	208	256	205
Completed	262	265	259	250	275	208	186	193	242	216
Backlog	58	51	44	38	43	15	17	20	36	22



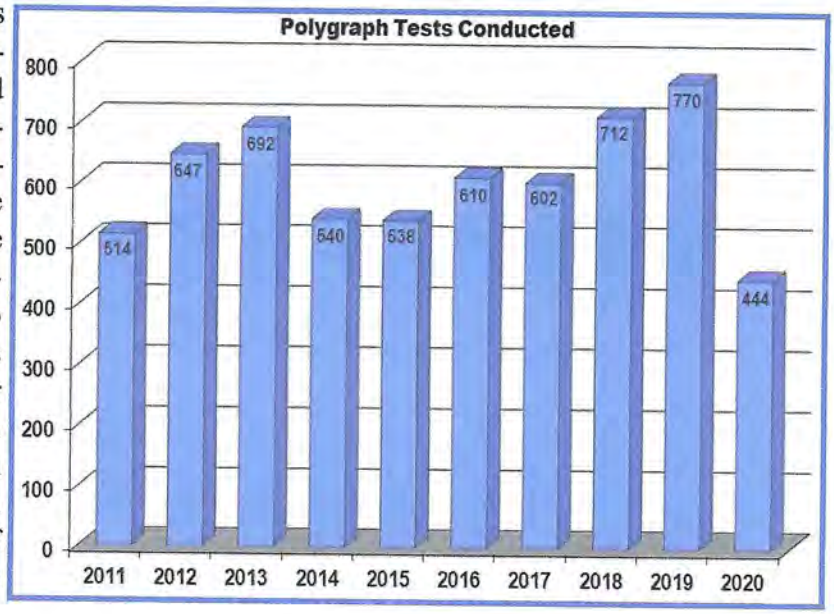
Footwear impressions are submitted for a search in the Unit's the FPX footwear database (the photo to the lower right is an example). When this database does not have shoes with similar class characteristics, a search of online shoe stores can be conducted. In one case, a search of the online websites found several models of a specific shoes brand with similar class characteristics, and a subsequent visit to a retail store found additional models with similar class characteristics. A list of the shoes that contained similar class characteristics was provided to the investigator.

In 2020, the Unit completed 216 cases and received 205 submissions. The backlog was 22 cases at the end of the year. The majority of cases worked during the year by the Unit were fire debris cases as shown in the graph to the right.

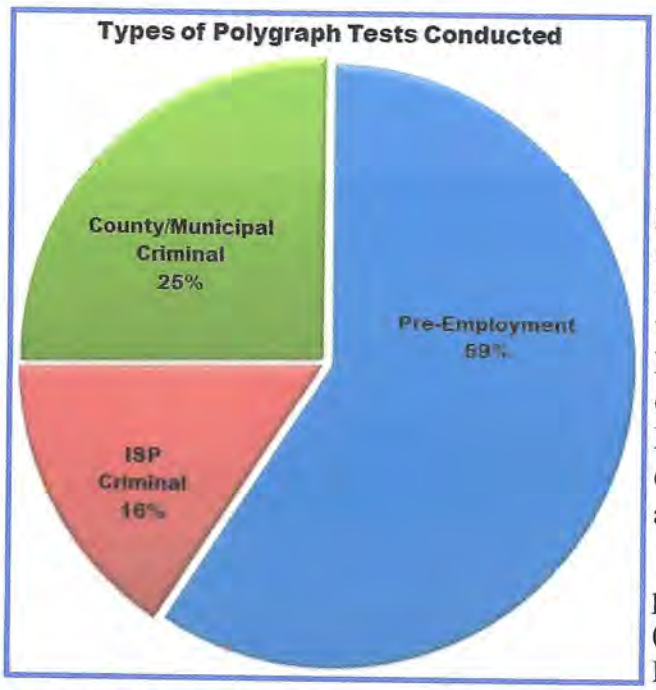
The Microanalysis Unit participates in the American Board of Criminalistics (ABC), American Society of Trace Evidence Examiners (ASTEE), Midwestern Association of Forensic Scientists (MAFS), and Organization of Scientific Area Committees (OSAC) Trace Materials Subcommittee and the Ignitable Liquids, Explosives, & Gunshot Residue Subcommittee.

Polygraph Unit

The Polygraph Unit (6 staff) provides polygraph examinations in criminal investigations to the Indiana State Police (ISP) and other state, county, and local law enforcement agencies. The Unit also conducts pre-employment testing for Indiana State Police positions including Capitol Police, Evidence Clerk, Fusion Center employees, Motor Carrier Inspector, and Trooper. In addition to these tests, the Polygraph Unit also performs pre-employment polygraph examinations for Indiana Department of Natural Resources Law Enforcement Division and the Indiana State Excise Police. In 2020, the Polygraph Unit also helped with escorting shipments of personal protective equipment (PPE) and testing kits throughout the State of Indiana.



The term polygraph literally means many writings. The name refers to the manner in which selected physiological activities are simultaneously measured and recorded by computerized instruments. A polygraph examiner interprets the charts of the physiological changes to determine deception and non-deception.



In 2020, the Polygraph Unit conducted a total of 444 polygraph examinations, which included 181 polygraph tests in criminal cases that resulted in 14 cleared cases, 21 additional leads developed, 27 confessions obtained, and 21 significant admissions received. The Unit conducted 263 pre-employment polygraphs, which is down from 578 conducted in 2019 due to decreases in hiring during the COVID-19 pandemic. From September to November 2020, the Polygraph Unit assisted the Indianapolis Metropolitan Police Department (IMPD) by conducting 92 pre-employment polygraphs at the Indianapolis Regional Laboratory. The proportions of the tests conducted for pre-employment applicants, ISP criminal, and county/municipal agencies criminal are shown in the chart to the left.

The Unit is active in the forensic community by participating in the American Association of Police Polygraphists (AAPP), American Polygraph Association (APA), and Indiana Polygraph Association (IPA).

The Polygraph Unit worked behind the scenes in many investigations and helped conclude several unique, as well as high profile cases. During a pre-employment polygraph, an admission was received that resulted in 14 felony charges in another state against the applicant for sexual contact with a minor.

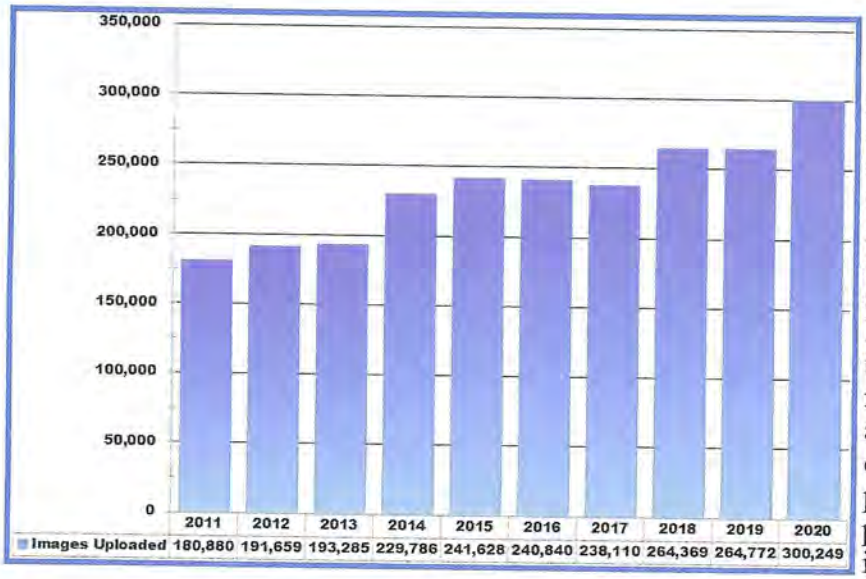
Evidence Management

Evidence Clerks (18 staff) are responsible for tracking the chain-of-custody of evidence upon receipt into the Laboratory Division's possession, organizing storage of the evidence so it can be retrieved when needed, and the release or destruction of evidence as necessary. The Evidence Clerks securely maintain evidence at the 14 Indiana State Police (ISP) Districts and the Indianapolis Regional Laboratory. The three Districts located at Evansville, Fort Wayne, and Lowell also have a Regional Laboratory. The Evidence Clerks receive evidence at the Regional Laboratories from law enforcement agencies for forensic analysis and return it when testing is complete. The Unit is active in the forensic community by participating in the Illinois Association of Property and Evidence Managers (IAPEM).

Evidence Clerks handled thousands of items of evidence throughout the year that included accepting 41,823 items from contributors at the Regional Laboratories for analysis. The Evidence Clerks received 24,112 additional items from ISP personnel for storage. In 2020, the Evidence Clerks were responsible for the storage of over 360,000 individual items of evidence and upon receiving disposition orders destroyed 26,109 items and released 3,762 items.

The Laboratory Division utilizes an electronic Request for Laboratory Examination Form. This form is dynamic with additional fields and/or pages appearing depending upon the information entered. The form is tailored to obtain only the information needed by each Unit, which reduces unnecessary, potentially contextually biasing information. The flexibility of the form allows each Unit to receive only the information needed. The Request for Laboratory Examination Form and an instructional PowerPoint® are available on the Laboratory Division's website (http://www.in.gov/isp/labs/2332.htm). The form is updated annually and includes an expiration date. Once expired, the form will lock to prevent the use of an obsolete version, and contributors are directed to the website to download the current version.

Photography Unit



The Photography Unit (1 staff) provides photography services for ISP investigation personnel and the ISP Public Information Office. The Unit also maintains a digital asset management system, Axon Commander®, for all Department criminal investigation and crash photos. Digital images are uploaded, cataloged, and archived for future reference from the 14 ISP Districts. In 2020, over 300,000 digital images were entered into the database, and more than 2.5 million images have been added since the inception of the photo database in 2008. The Photography Unit printed 1,769 investigative color prints and provided 493 CDs to investigators and insurance companies during 2020.

Quality Assurance & LIMS/IT Support

The **Crime Scene Investigations Quality Assurance Unit** (4 staff) administers training in crime scene investigation to local law enforcement agencies as well as Indiana State Police (ISP) Crime Scene Investigators (CSI). The Unit assists the Indiana Law Enforcement Academy (ILEA) in certification of CSIs from departments throughout Indiana. The Crime Scene Investigations Section Commander is a member of the ILEA CSI Certification Board. The Unit also provides specialized training to other agencies upon request. Members of the Unit regularly provide instruction at both the ISP Recruit Academy and the ILEA Basic Courses.

The ISP Evidence Management System Quality Assurance Program annually audits each of the 14 ISP Districts, as well as the Indianapolis Regional Laboratory. The three Districts located at Evansville, Fort Wayne, and Lowell also have a Regional Laboratory. A complete inventory/audit is conducted every two years at each of the Laboratory Division's evidence storage facilities. These audits are a comprehensive review to account for every item stored at the facilities. The Unit is also occasionally requested to audit a local law enforcement agency's evidence system. These audits are completed only when there is a criminal investigation involving internal issues with the physical evidence stored at the location.

Additionally, the Unit semi-annually assesses the work of all ISP CSIs. As part of the quality assurance program to ensure competency and properly functioning equipment, each CSI is also given a proficiency test annually under the supervision of the Unit. In 2020, the Crime Scene Investigations Quality Assurance Unit made significant contributions in maintaining crime scene accreditation including reviewing and updating procedures, and monitoring to ensure compliance with accreditation requirements.

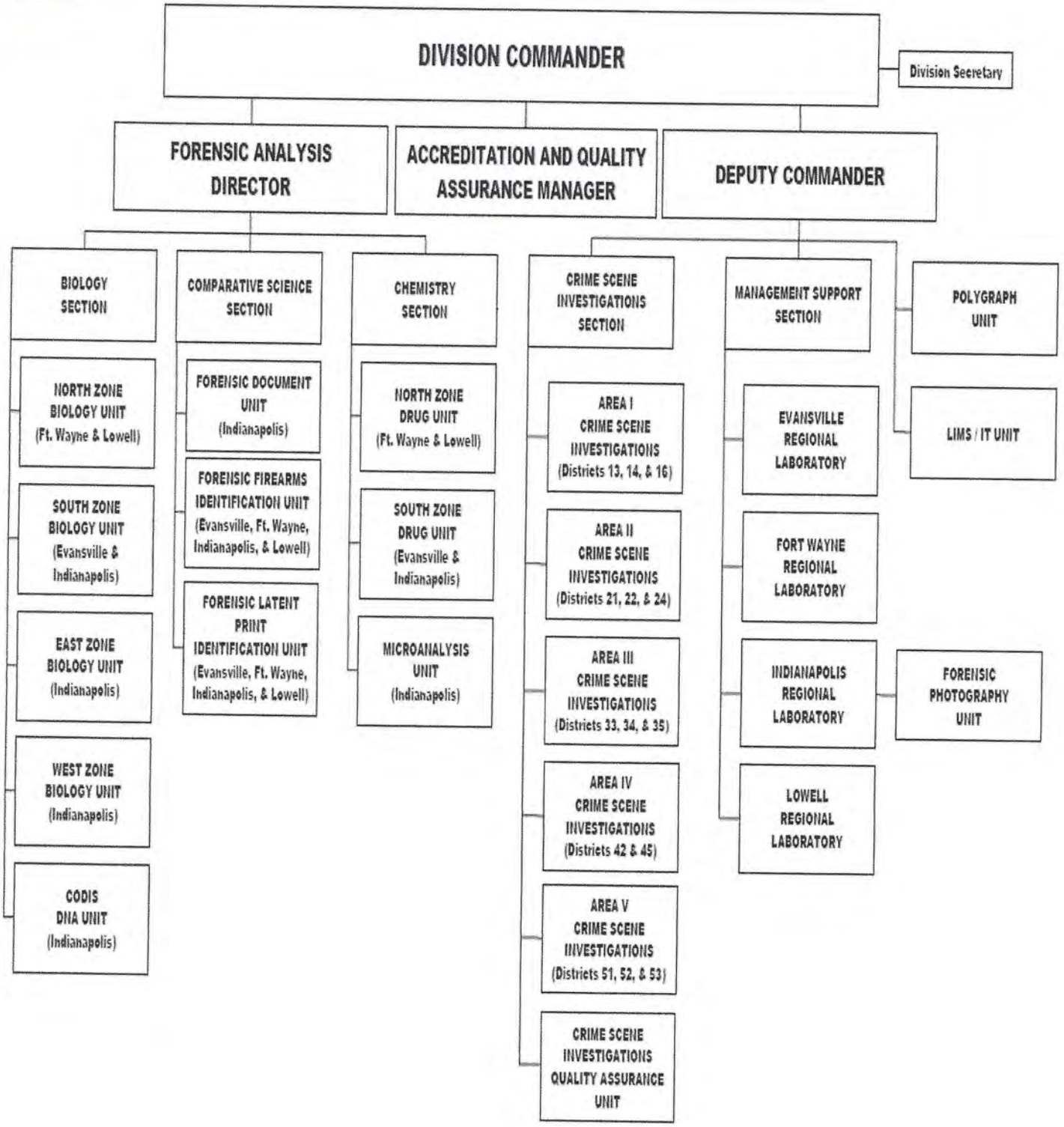
The **Laboratory Quality Assurance Unit** (1 staff) ensures compliance to laboratory and accreditation quality assurance standards. The Unit maintains updated and secure quality assurance documentation, oversees the implementation and continued corrective action compliance, ensures laboratory adherence to proficiency testing and witness critique requirements, and develops and conducts quality assurance related training for Laboratory Division staff. The Unit also assisted the Crime Scene Investigations Quality Assurance Unit with maintaining accreditation of crime scene services and the District evidence storage facilities.

The Laboratory Division is accredited by the American National Standards Institute (ANSI) National Accreditation Board (ANAB). Accreditation is a voluntary program in which a crime laboratory that participates must demonstrate that its management, personnel, operational and technical procedures, equipment, and physical facilities meet established international quality requirements. This Unit participates in the American Society for Testing and Materials-International (ASTM-I), the Association of Forensic Quality Assurance Managers (AFQAM), and the Organization of Scientific Area Committees (OSAC).

The **Laboratory LIMS/IT Unit** (2 staff) has the primary duty of maintaining and administrating the Laboratory Information Management System (LIMS). The LIMS Unit tracks all evidence currently held by the ISP Laboratory Division and stores analytical results, records, and reports. This system is integrated with the web based reporting system iResults, which provides the Certificates of Analysis (reports) to law enforcement agencies and county prosecutors.

The LIMS/IT Unit supports Laboratory Division personnel at the four Regional Laboratories and 14 District locations. The Unit provides assistance with maintaining and troubleshooting other systems used by Laboratory Division personnel, that include Combined DNA Index System (CODIS), Integrated Ballistics Identification System (IBIS), analytical instrumentation, camera surveillance, door access/security, and phone systems. The Unit also maintains and supports a digital workflow system (Mideo®) utilized by the Document, Latent Print, and Microanalysis Units, and the digital asset management system (Axon Commander®) employed by the Photo Unit.

Organizational Chart



Contact Information

Evansville Regional Laboratory

19411 Highway 41 North

Evansville, IN 47725

Laboratory Manager: Dan Colbert

DColbert@isp.IN.gov

812-867-3157

800-852-3970

Fort Wayne Regional Laboratory

5811 Ellison Road

Fort Wayne, IN 46804

Laboratory Manager: Stacey Hartman

SHartman@isp.IN.gov

260-436-7522

800-552-0976

Indianapolis Regional Laboratory

550 West 16th Street, Suite C

Indianapolis, IN 46202

Laboratory Manager: Paulita Thomason

PThomason@isp.IN.gov

317-921-5300

866-855-2840

Lowell Regional Laboratory

1550 East 181st Avenue

Lowell, IN 46356

Laboratory Manager: Daun Powers

DPowers@isp.IN.gov

219-696-1835

877-874-0009

Visit the Laboratory Division's website for Evidence Protocols and Forms, Test Methods, CODIS and Drug Stats and Information, Training Opportunities, and many more resources.
http://www.in.gov/isp/labs/

Appendix J

PowerPoint Presentation

1

State Medical Examiner Feasibility Study

Eric L. Lawrence
Director Forensic Analysis
(Retired)

2

Introduction
Purpose of the Presentation

To discuss the need , feasibility and options for establishing a State Medical Examiner Office.

3

Methodology

- Survey and interview stakeholders.
- Review literature related to the constitutional and legal requirements.
- Review literature focused on medicolegal death investigation (MDI).
- Visit and / or tour coroner and medical examiner facilities.
- Review national standards and recommendations for MDI quality.
- Review autopsy facility operations and construction.

4

The Past

- Ordinances, Constitutions and the Law
- Definitions and Requirements
- Medicolegal Timeline

5

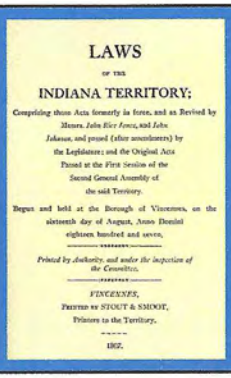
Northwest Territory

1783

6

Section 7 : "the governor shall appoint such magistrates and other civil officers in each county"

7



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9

10

Article 4, Section 25: "There shall be elected in each county, by the qualified electors thereof, one Sheriff and one Coroner."

11

1816 Coroner Election Franklin County *

- James Brownlee 422 votes
- Joseph Northrop 112 votes

* A New Nation Votes, American Election Returns 1787-1825 Tufts Digital Collection and Archives

12

13

Article 6 Section 2

- There shall be elected in each county by the voters thereof at a time of holding general elections a Clerk of Circuit Court, Auditor, Recorder, Treasurer, Sheriff, Coroner and Surveyor.*

* Indiana Constitution 1851

14

Relevant Indiana Codes

- I.C. 36-2-14 : Chapter 14 County Coroner (1852)
- I.C. 4-23-6 : Chapter 6 Commission on Forensic Science (1959)
- I.C. 4-23-6.5-3 Chapter 6.5 Coroners Training Board (1994)
- I.C. 10-11-11 Chapter 11 Office of Medical Studies (2019)

15

Definitions *

- Coroner: An elected or appointed official whose duty is to oversee medicolegal death investigations for a county and ensure certification of cause and manner of death.
- Medical Examiner: An appointed forensic pathologist whose duty is to oversee medicolegal death investigations, perform post-mortem examinations and certify cause and manner of death.
- Forensic Pathologist: A physician who is board certified in anatomic pathology as well as forensic pathology.

* Organizational and Foundational Standard for Medicolegal Death Investigation, OSAC Document Version 1.0, August 2019

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Coroner Requirements

- To a candidate for the Office of Coroner , the person must have lived in the county for at least one year.*
- The Indiana Coroners Training Board is funded to provide 40 hours basic training as well as 16 hours of annual continuing education to Coroners and Deputy Coroners.**

* Article 6 , Section 4 Indiana Constitution 1851
** Indiana Coroners Training Board Guidebook 1996

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Forensic Pathologist Requirements *

- Graduate High School (4 Years)
- Complete Undergraduate Degree (4 Years)
- Complete Medical School (4 Years)
- Complete Pathology Residency (3 Years)
- Complete Forensic Pathology Fellowship (1Year)
- Earn Medical License as well as Board Certification

* American Board of Pathology, Booklet of Information, Revised July 2020

18

Medicolegal Systems Timeline

- 1928-National Academy of Science Report (Abolish Coroners Office)
- 1932-National Research Council (Develop Legal Medicine Systems)
- 1954-Model Post-Mortem Act (Recommends MD Commission)
- 1959-Indiana Establishes Commission on Forensic Commission

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Medicolegal Systems Timeline

- 1968 National Research Council Report (Promotes the use of Forensic Pathologists)
- 1994 State of Indiana creates Coroners Training Board
- 2007 State of Indiana creates mandate of Training and Certification
- 2009 National Academy of Science Report (Require Accreditation /Certification)
- 2019 OSAC Report (Require Accreditation/Certification)

20

The Present

- 1968 National Research Council Report (Promotes the use of Forensic Pathologists)
- 1994 State of Indiana creates Coroners Training Board
- 2007 State of Indiana creates mandate of Training and Certification
- 2009 National Academy of Science Report (Require Accreditation /Certification)
- 2019 OSAC Report (Require Accreditation/Certification)

21

America's Response as of 2020 *

- Centralized Medical Examiner Systems (16)
- County / District Medical Examiner Systems (6)
- County Based Coroner / Medical Examiner Systems (14)
- County Based Coroner Systems (14)

22

23

Accreditation

- A program that provides evidence that a *system* adheres to nationally recognized quality assurance standards.
- Transparency, autonomy, uniformity, oversight, peer review, reliability.

24

Certification

- A program recognizing that an *individual* has demonstrated competency and continued proficiency in a particular field adding confidence to the accuracy and reliability of their findings.
- Education, training, knowledge, skill, experience, expertise, mastery.

25

Accreditation/Certification

- NAME Accredited Offices – (78)
- IACME Accredited Offices – (29)
- ABMDI Certified Investigators – (1,000+)

Source: NAME, IACME and ABMDI Websites

26

State Oversight Agencies

- Department of Health (14)
- Commissions (15)
- Attorney General (3)
- Department of Public Safety (3)
- State Police (1)
- Other (4)

Source : Each states' M.E./Coroner website

27

Autopsy Location Data

- Hospital (31)
- Morgue (18)
- Consultants (14)
- Funeral Homes (18)
- Coroners Office (4)
- Universities (1)

* 2018 CTB Autopsy Data

28

29

30

Forensic Autopsy Findings *

- Accidental: 42%
- Natural: 37%
- Suicide: 10%
- Homicide: 7%
- Undetermined: 3%

* Four state average (KY, MI, OH, VA) from each state or county Coroner/ME website

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Service Needs Estimate

- Annual # of Indiana Deaths – 67,000
- Predicted # of Medicolegal Death Investigations-13,400
- Predicted # of Autopsies – 6,000
- Recommended # of Forensic Pathologists – 24 *

* Based on NAME Standard of 250 Autopsies/Year/Pathologist

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Autopsy Costs

- Contractual arrangements vary from county to county.
- Several counties lack any formal contract.
- Fees vary depending on services.
- Cost of private autopsy ranges from $2,500 to $5,000.
- Cost for forensic autopsy ranges from $850 to $2,000.
- Some offer autopsy-testimony packages at reduced rates.
- 6,000 autopsies would cost approximately $9,000,000.

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Per Capita Spending Indiana

- County Spending Per Capita Range = $0.55 - $7.00*
- State Spending Per Capita = $2.50
- National Per Capita Spending Recommendation = $4.50**
- Current Total State Spending = $16,803,000
- Projected Spending (6,000 Autopsies) = $18,303,000
- Recommended Spending = $30,294,000

34

Primary Obstacles to Quality

- Scarcity of Board- Certified Forensic Pathologists
  a. National Recommendation is 250 autopsies per year per Forensic Pathologist.
  b. Indiana range = 1-950 autopsies per year by various Forensic Pathologists*.
- Substandard Autopsy Facilities
  a. Funeral Homes
  b. Pole Barns
  c. Outdated Medical Facilities

* CTB Autopsy Data 2018

35

Secondary Obstacles to Quality

- Costs of New Technologies
- Pandemics- COVID-19
- Epidemics- Opioid Overdoses
- Mass Casualty Incidents- FedEx Shooting

36

Paths to Quality

- Training and continuing education.
- Uniform procedures.
- Casework review.
- Well-defined lines of communication.
- Independent oversight.
- Transparency.
- Autonomy.

37

The Options

- Status Quo : "Catch as Catch Can"
- Establish Postmortem Examiner Commission
- Establish State Medical Examiner Office with a centralized location.
- Establish State Medical Examiner Office with five regional facilities.

38

Maintaining the Current Coroner System*

- Indiana Coroner Budget = $18,303,000/year
- Per Capita Spending Range for Indiana Coroner = $0.55 - $7.00/Capita/County
- Per Capita Spending for State of Indiana = $2.73/Capita

* 2020 Appropriations, Association of Indiana Counties (CTB)

39

Establish Postmortem Commission

- Create by Statute
  - Members appointed by the governor.
  - To provide management oversight of Medical Examiners Office
- Duties
  - Create Office of State Medical Examiner
  - Establish Uniform Standards for medicolegal death investigations.
  - Recruit qualified staffing.
  - Identify existing or new construction needs for forensic autopsy facilities.
  - Mitigate problems related to the performance of the Medical Examiners Office.
  - Ensure compliance to established standards of quality .
  - Coordinate grant funding opportunities.
  - Improve stakeholder communication.

40

Centralized Medical Examiner Office

- New Construction Costs = $45,000,000.00
- Personnel Costs = $9,551,000.00/year
- Operating Costs = $780,000.00/year
- Supplies and Services Costs = $400,000/year
- Recurring Costs= $10,731,000/year
- Per capita spending= $1.60 + $1.40* = $3.00

* Add on from Coroner Spending

41

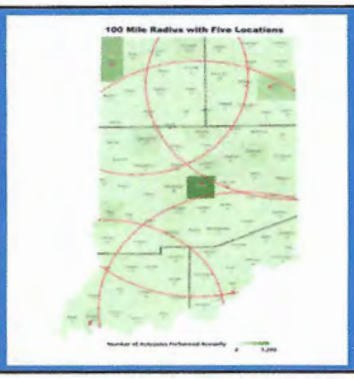
42

Regionalized Medical Examiner Offices

- New Construction = $62,012,500.00
- Personnel Costs = $10,136,000/year
- Operating Costs = $1,073,600/year
- Supplies and Services Costs = $400,000
- Recurring Costs = $11,609,600
- Per Capita Spending= $1.73 + $1.40* = $3.13

* Add on from Coroner spending

43



44

Recommendations

- Establish Postmortem Examinations Commission.
- Adopt rules and procedures compliant with NAME accreditation.
- Adopt rules and procedures compliant with ABMDI certification.
- Add age, education and criminal history requirements for Coroners.
- Direct Coroners to complete an operational survey on a biennial basis.

45

"While good people can often make a poor system function, it is far better to institutionalize an optimal system that can survive poor people....."

Dr. Victor Weedn

46

Questions/Comments

INDIANA STATE POLICE

47