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Topic: Human Right Issues of Artificial Intelligence (AI) Gaps and Challenges, and Affected Future Legal Development in Various Countries

Optimizing the Role of the Central Java Police Forensic Laboratory in Proving Murder Cases Caused by Poison

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Abstract. *The role of the Central Java Police Forensic Laboratory is very important in assisting the process of uncovering criminal cases, especially in proving that the cause of death was caused by toxic chemicals. In practice there are obstacles in its implementation such as limited amount of evidence, complexity of analysis, information about poisons, uncertainty in interpretation which can interfere with criminal law enforcement in Indonesia. In analyzing this article the author uses empirical juridical methods using secondary and primary data. The research result of this article is optimizing the role of the Forensic Laboratory Division of the Central Java Regional Police, Sub-Sector of Biological Chemistry in terms of the importance of improving equipment, qualifications of experts, and collaboration with related agencies. With this optimization, laboratories can provide more reliable and trustworthy analysis results, which can strengthen evidence in legal cases. Apart from that, increasing the role of forensic laboratories can also help increase legal certainty and more effective law enforcement in the region.*

Keywords: *Forensic; Laboratory; Poison.*

1. Introduction

Law enforcement is a systematic effort to establish and maintain order, security, and tranquility in society, primarily by taking decisive action in response to lawlessness. Evidence is the main focus of investigations and legal proceedings after a criminal case. This is because in all stages of evidence there is a systematic and methodical procedure in presenting evidence to determine the guilt or innocence of the accused in a criminal case, especially in a trial.

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Law enforcement officials have major challenges in determining the guilt or innocence of a suspect/defendant in a criminal case without at least two reliable evidence. Efforts made by law enforcement officials to ascertain the factual truth of a criminal case aim to prevent the occurrence of criminal errors against someone. According to Article 6 Paragraph (2) of Law Number 48 concerning Judicial Power, it is stated that a person cannot be convicted of committing a criminal offense unless the court believes, based on valid evidence, that the person concerned can be held accountable and guilty of the act he is accused of.

Criminal investigations have made significant progress recently due to the rapid advancement of contemporary science and technology. The rapid development of science and technology has led to the establishment of forensic laboratories, which have a significant influence on investigations and investigations.¹

According to Article 14 Paragraph (1) letter h of Law Number 2 of 2002 concerning the National Police of the Republic of Indonesia, investigators are tasked with managing police identification, police medicine, forensic laboratories, and police psychology in order to carry out investigations. To eradicate crimes that include the use of science and technology, the Indonesian National Police (Polri) must also use science and technology. The practice of examining crimes with technology is commonly called scientific investigation, some of whose responsibilities and duties are carried out by the Forensic Laboratory.

Forensic laboratories play an important role in the investigation and investigation of criminal cases by carefully analyzing evidence.² The National Police Forensic Laboratory is a facility that provides technical assistance in investigations and investigations, as stipulated in the Regulation of the Chief of Police No.10 of 2009 concerning procedures and requirements for requesting Criminalistic Technical Examination of Crime Scenes and

Criminalistic Laboratory of Evidence to the Forensic Laboratory of the National Police of the Republic of Indonesia Article 1 paragraph 2 which reads:

"The National Police Forensic Laboratory is a work unit of the National Police including the Forensic Laboratory Center and the Branch Forensic Laboratory which is tasked with fostering and carrying out the functions of the Forensic/Criminalistic laboratory in order to support investigations carried out by the Regional Unit, with the division of service areas as determined

¹ Abdussalam, 2006, *Buku Pintar Forensic (Scientific Evidence)*, Restu Agung, Jakarta, p. 1

² Abdul Mun'im Idries and Agung Legowo Tjiptomartono, 1982, *Application of Judicial Medicine in the Investigation Process*, Karya Unipres, Jakarta, p. 1

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by the Decree of the Chief of Police."

In accordance with Article 1 paragraph 7 that the criminalistic laboratory examination of evidence is "examination of evidence obtained from the search, retrieval, seizure, security and dispatch of police officers or other law enforcement agencies, carried out using scientific methods in the Labfor Polri, so that the evidence that has been examined can be used as one of the legal evidence."

Based on Article 1 number 5 of the National Police Regulation Number 10 of 2009, "Evidence is objects, materials, objects, traces, or traces that have something to do with a criminal act. Criminal cases basically have a triangle of evidence (*triangle evidence*) of the crime scene (crime scene), which is a triangle formed due to the interrelationship between the victim, the perpetrator and the tool (each of which is a triangular angle) that is in contact with each other at the time the occurrence of criminal acts."³

The Subdivision of Biological Chemistry in the Forensic Laboratory of the Central Java Regional Police carries out the functions of criminalistic technical examination of crime scenes and criminalistic laboratory examination of evidence using science and technology in the fields of chemistry, biology and toxicology as the main method / instrument. The object of forensic toxicology research covers various aspects related to the use of harmful substances or poisons in legal and judicial contexts.

Based on the author's interview with AKBP ROSTIAWAN ABRIANTO, A.Md.Ak, the object of forensic toxicology research is very important in supporting law enforcement and justice, as well as to protect the public from the dangers arising from the use of dangerous and toxic chemicals. But in carrying out its activities, it encounters difficulties or obstacles in examining evidence so that the results obtained are less than optimal in helping to solve criminal cases related to poison. The obstacles are as follows:⁴

The Subdivision of Biological Chemistry in the Forensic Laboratory of the Central Java Regional Police carries out the functions of criminalistic technical examination of crime scenes and criminalistic laboratory examination of evidence using science and technology in the fields of chemistry, biology and toxicology as the main method / instrument. The object of forensic toxicology research covers various aspects related to the use of harmful substances or poisons

³ H.S. Brahmana, 2014, *Criminalistics and the Law of Evidence*, LKBH Faculty of Law, Universitas Samudra, Langsa, p. 18.

⁴ Author's interview with AKBP ROSTIAWAN ABRIANTO, A.MD.AK, Head of Subbid Kimbio Bidlabfor Polda Central Java on April 24, 2024

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follows:⁶

1) Sample limitations:

a. The number and quality of samples available for toxicological analysis can vary greatly. This can complicate the detection and identification of toxins, especially if toxins are present in small amounts or have broken down over time.

b. Delay in sampling can also result in degradation of toxins and complications in the analysis process.

2. Complexity of analysis:

a. Toxicological analysis often involves complex and sophisticated techniques. This requires special expertise and equipment that may not be available in all forensic laboratories.

b. Interpretation of toxicological analysis results also requires a deep understanding of toxic metabolism, its physiological effects, and potential interference from drugs or other substances that may be present in the sample.

3. Lack of information about poisons:

In some cases, investigators do not know the type of poison used, resulting in errors in the procedure for handling evidence, resulting in evidence being damaged and cannot be examined.

4. Uncertainty of interpretation:

⁵ Author's interview with AKBP ROSTIAWAN ABRIANTO, A.MD.AK, Head of Subbid Kimbio Bidlabfor Polda Central Java on April 24, 2024

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- a. The results of toxicological analysis can not always give a definite answer about the cause of death. Levels of toxins in a victim's body may not always correlate directly with the cause of death.
- b. Other factors, such as the victim's health condition, medical history, and manner of poisoning, also need to be considered to accurately determine the cause of death.

The impact of these barriers can be seen in the context of criminal law enforcement and justice theory. Limitations in the analysis and interpretation of toxicological evidence can reduce the success of investigations and prosecutions of perpetrators of crimes, which in turn can interfere with justice in the legal system. It can also create gaps in access to justice, where cases involving hazardous and toxic substances may not be properly disclosed or acted upon due to the limitations outlined above. From the background above, the author is interested in discussing more deeply with the title "Optimizing the Role of the Central Java Police Forensic Laboratory in Proving Murder Cases Caused by Poison".

2. Research Methods

This study used an empirical juridical approach because it used secondary data supported by interviews. The approach used in legal research is the statute approach. Empirical juridical research method is an approach used in legal research to analyze legal regulations that exist in a country's legal system. This method aims to identify, classify, and analyze the applicable positive laws and relate them to the norms or values prevailing in society. The main data used in this research method are laws and regulations, court decisions, and other legal documents.

3. Results and Discussion

3.1. The role of the Central Java Police Forensic Laboratory in proving murder cases caused by poison.

"Laboratory" in the Big Dictionary Indonesian is a certain place or room equipped with tools for conducting experiments, investigations, and so on. In the legal context, there is an evidentiary theory that focuses on the process of collecting and assessing evidence to prove the truth of a claim or accusation in court.

Teguh Prihmono, et al. emphasized that in the realm of law enforcement, forensic laboratories

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function as scientific methods and tools to prove or uncover a case to ensure material truth.⁷ Forensics is a field of science that is used to assist the process of establishing justice through the application of scientific methods.⁸ Forensic science covers several disciplines such as forensic physics, forensic chemistry, forensic psychology, forensic medicine, forensic toxicology, computer forensics, forensic ballistics, forensic metallurgy, and more.⁹

The National Police Forensic Laboratory acts as an authorized expert in its field, as mandated by Article 7 paragraph (1) letter h and Article 120 paragraph (1) of the Criminal Procedure Code. In the examination of crime scenes, a scientific crime investigation (SCI) approach is used.¹⁰ Forensic Laboratories offer examination services to law enforcement agencies and the general public, meeting their demands for justice and other related purposes.

In practice, the Forensic Laboratory plays an important role as an expert witness throughout the case investigation process. The main purpose is to provide evidence that supports the case being examined, and such evidence must be presented before the trial takes place. Regarding evidence in criminal cases, expert testimony plays a role in two main forms, namely written material which is generally called *Visum et repertum*, and expert information obtained from laboratory research results.

In the context of proving murder cases involving poison, the Central Java Police Forensic Laboratory plays an important role, which is in line with the Theory of Evidence and the Theory of Criminal Enforcement. The Theory of Evidence, proposed by John Henry Wigmore, a prominent American jurist known for his expertise in the law of evidence emphasizes the importance of the scientific method in collecting, testing, and assessing evidence to form valid legal conclusions.¹¹ This laboratory, using *scientific crime investigation* (SCI) methods provides scientific evidence such as toxicological analysis, which can detect and identify the type of poison used and relate it to those in the victim's body, evidence at the crime scene (crime scene) and the alleged perpetrator.

⁷ Teguh Prihmono, Umar Ma'ruf, and Sri Endah Wahyuningsih, The Role of the National Police Forensic Laboratory as a Support for Scientific Investigations in the Criminal Justice System in Indonesia, *Khaira Ummah Law Journal*, Vol. 13. No. 1 March 2018.

⁸ la.bo.ra.to.ri.um, <https://kbbi.kemdikbud.go.id/entri/laboratorium>, accessed on 26 April 2024

⁹ Sudarsono, 2006, *How to Complete Scientific Papers in the Field of Law*, revised edition, *Mitra Policy Tanah*, Yogyakarta, p. 37

¹⁰ R. Atang Ranoemihardja, 1991, *Forensic Science*, PT Tarsito, Bandung, p. 58

¹¹ Ahmad Ali and Wiwie Heryani, 2012, *Principles of Civil Evidence Law*, Kencana, Jakarta, p. 87

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Criminal Enforcement Theories, one of which is revealed by Herbert L. Packer in his model of *"The Limits of the Criminal Sanction,"* highlight the importance of efficient and effective legal processes in applying criminal law. In this case, the role of the Forensic Laboratory is not only limited to evidence but also supports law enforcement by providing evidence that not only helps identify the perpetrator, but also strengthens the prosecution's argument in the trial.¹² With valid and accurate evidence, courts can ensure that decisions made are fair and based on concrete evidence, thereby reducing the risk of judicial error.

Therefore, the integration between Evidentiary Theory and Criminal Enforcement Theory in forensic practice is crucial. The Central Java Police Forensic Laboratory, with its competence, supports the search for justice through objective and reliable scientific evidence. In cases of poisoned homicide, this laboratory not only plays a role in the investigation phase but also during the court process, but also helps confirm that the criminal enforcement process is carried out by meeting all scientific and justice criteria. The results of laboratory work that include in-depth analysis of the poison and its effects on the victim's body are key in ensuring that any legal decisions taken are based on a deep understanding of facts and irrefutable evidence.

3.2. Optimization of the Role of the Central Java Police Forensic Laboratory in Proving Murder Cases Caused by Poison

According to the Big Dictionary Indonesian, optimization is the action or process of making something (such as a design, system, or decision) more perfect, functional, or effective. It involves optimizing processes, methods, and actions to achieve the best, highest, and most profitable results. The term "optimization" comes from the word "optimal" which means best or highest.¹³ According to Winardi, optimization is a measure that causes the achievement of goals.¹⁴ Optimization involves identifying the most optimal solution, which does not necessarily yield the greatest profit when the goal is to maximize profits, or the lowest cost when the goal is to minimize costs.¹⁵

In accordance with the Regulation of the Chief of Police Number 10 of 2009, the National Police Forensic Laboratory is a police unit responsible for the development and implementation of forensic or criminal laboratory functions to assist investigations and investigations. A crime

¹² *Ibid.* p. 88

¹³ Ministry of Education and Culture, 1994, *Kamus Besar Indonesian*, Balai Pustaka, Jakarta, p. 800

¹⁴ Winardi, 1996, *Introduction to Sales Management*, PT. Citra Aditya Bakti, Bandung, p.363

¹⁵ Hotniar Siringoringo, 2005, *Linear Programming: Operations Research Engineering Series*, Graha Ilmu, Yogyakarta, p. 4

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laboratory is an official organization that conducts evidence studies using special technologies and scientific procedures to assess the occurrence of crimes.

The tasks of the forensic laboratory are mainly centered on the implementation of tasks on the basis of:

- a. Law No. 8 of 1981 concerning Criminal Procedure Law.
- b. Law No. 2 of 2002 concerning the National Police of the Republic of Indonesia.
- c. Decree of the Minister of Health of the Republic of Indonesia Number 1173 / Menkes / SK / x / 1998 appointed the Psychotropic and Narcotics Examination Laboratory.
- d. Circular Letter of the Attorney General of the Republic of Indonesia Number 5 / KRI / 2589 appoints the National Police Criminal Investigation Laboratory for written examination.
- e. The Chief Justice of the Supreme Court of the Republic of Indonesia through Letter Number 808/xii/1983 has appointed the National Police Criminal Investigation Agency to examine evidence related to general criminal cases.
- f. Circular Letter No. SE/003/SA/2/1984 issued by the Attorney General of the Republic of Indonesia provides expert information on the use of signatures and writings as evidence.
- g. National Police Regulation of the Republic of Indonesia Nomor. 21 of 2010 which regulates the organizational structure and work procedures of the Police Headquarters work unit.
- h. National Police Regulation of the Republic of Indonesia Nomor. 10 of 2009 regulates procedures for requesting forensic laboratory assistance.

The main tasks of the forensic laboratory in accordance with the decision of the Chief of Police No.Pol.KEP/09/V/2001 dated May 25, 2001 are:

- a. Conduct scientific investigations using laboratory techniques, advanced technology, and forensic science in collaboration with investigators.
- b. Provide operational assistance to regional police units and other agencies outside the National Police in accordance with their legal authority, including public services related to criminology.
- c. Manage and carry out the administration of criminalistic investigations, which includes the

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collection, analysis, and presentation of data related to the planning and implementation of actions.

According to the author's interview with AKBP ROSTIAWAN ABRIANTO, A.Md.Ak, it was conveyed that in addition to the obstacles mentioned above, the responsibility of forensic laboratories, especially the subfield of Biological Chemistry, there are several other obstacles faced including:¹⁶

- a. It is difficult to determine the cause of death for which an autopsy was not performed ;
- b. Organs from autopsies are mishandled so that they are damaged and cannot be examined, this occurs most often in murders caused by cyanide poisoning.
- c. Another obstacle is that the victim has died from alcohol poisoning and has not been autopsied in the grave, but what is brought for examination is only evidence of liquor so that there is difficulty to determine what the cause of death is.

So that from the role of the forensic laboratory which is very crucial, it is necessary to optimize both in terms of regulation, policy determination at the implementation level so as to make it easier for law enforcement officials and the community who want to seek justice.

Optimization of the Central Java Police Forensic Laboratory, especially Sub-Sector of Biological Chemistry, is very important in conducting research related to the cause of death which can be related to the Theory of Legal Certainty and Law Enforcement Theory. The first step in this optimization is to strengthen the laboratory infrastructure, including the provision of the necessary equipment and facilities to perform toxicological biological chemical analysis quickly and accurately.

With adequate infrastructure, laboratories can provide more reliable results, ensuring legal certainty in the process of investigating deaths. In addition, improving the qualifications of experts and laboratory officers also needs to be done. Training and education related to the latest analytical techniques and laboratory methodologies can help improve skills in identifying and interpreting evidence. This will reinforce the success of laboratories in providing strong evidence, which is a key prerequisite for effective law enforcement.

In the context of Legal Certainty Theory, optimization of forensic laboratories can make an

¹⁶ Author's interview with AKBP ROSTIAWAN ABRIANTO, A.MD.AK, Head of Subbid Kimbio Bidlabfor Polda Central Java on 24 April 2024

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important contribution in ensuring legal certainty in the death investigation process. By providing clear and irrefutable evidence of the cause of death, forensic laboratories help ensure that decisions made by law enforcement officials are based on valid facts and evidence, thus strengthening public confidence in the legal system. Furthermore, optimization of forensic laboratories can also help in the application of Law Enforcement Theory. By providing strong and reliable evidence, forensic laboratories support fair and effective law enforcement processes. This gives confidence to the community that perpetrators of crimes will be dealt with strictly in accordance with applicable law, thus providing a deterrent effect for potential perpetrators of crime.

4. Conclusion

From the discussion above, it can be concluded that the role of forensic laboratories, especially in the field of toxicology, is very important in the investigation stage and in criminal justice itself, the examination of murder crimes involved in the presence of toxic hazardous chemicals to determine how much the levels of these substances that can cause death are very dependent on the forensic laboratory. In its implementation, the forensic laboratory has tried to overcome existing obstacles by collaborating and coordinating with relevant agencies authorized in conducting autopsies related to the handling of evidence so that it is in accordance with the correct evidence handling procedures, proactively coordinating with investigators in the region, conducting socialization at the regional level related to forensic laboratories, and conducting *teaching labs*. In the cadets of the Police Academy, from these steps, it is hoped that law enforcement officials, in this case, investigators can obtain accurate evidence to uphold justice and provide legal certainty for the criminal paradigm in Indonesia. For better optimization, the Central Java Police Forensic Laboratory, especially Sub-Sector of Biological Chemistry, can perform *power actions*; Externally, Labfor must continue to establish good communication with the *user*, in this case the investigator, such as coordination *on the spot* (during the incident) *by phone or video call*; Periodically, Labfor must carry out regional visits or socialization about the initial handling of a case; instill in the mind of every investigator, that Labfor is a faithful friend in solving all "problem cases"; internally it can be done by updating science and technology that continues to develop through information technology or journals for each Labfor personnel; Collaborate with academics on renewable scientific methods including improving inspection capabilities for Labfor personnel; Establishing communication with instrument/portable equipment vendors for products that are increasingly simple but fast and precise in analyzing evidence, from these steps the author believes that Labfor will grow and become the only institution of reliance and trust for law enforcement officials in this case investigators for case disclosure.

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