

# Analysis of Cyber Criminal Law on The Protection of Electronic Medical Records (Study at Premier Medika Partner Hospital Medan)

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**Abstract:** In today's digital era, the development of information technology has revolutionized various aspects of human life, including in the health sector. The use of electronic medical records in hospitals has become a common standard, allowing for more efficient storage of patient data and faster access for medical personnel. However, along with this progress, legal challenges have also emerged, especially related to the protection of patient personal data. The issues discussed are how the implications of cyber criminal law affect the protection of electronic medical records in hospitals, how the obstacles and barriers are in protecting electronic medical records at Mitra Medika Premier Hospital Medan and how cyber crime prevention efforts are in protecting electronic medical records at Mitra Medika Premier Hospital Medan. The research used empirical juridical by using data collection methods through field research and library research. Library studies are obtained by reading, studying and reviewing books, laws and regulations, journals or data in the form of library materials while field studies are conducted using interview methods. Some forms of violations that may occur in the management of electronic medical records at Mitra Medika Premier Hospital Medan are Unauthorized Access: When the login of an absent health worker is entrusted to another health worker to replace data entry and Data Retrieval: Patient data is used by unauthorized parties, for example laboratory result photos. Efforts made by Mitra Medika Premier Hospital Medan in protecting Health data include: Strengthening Technology Infrastructure: Implementation of firewalls, antiviruses, and data encryption, Routine Audits: Ensuring the system runs according to security standards, Increasing Staff Awareness: Regular training related to data protection and Updates/development of information technology systems, especially related to data security.

**Keywords:** Cyber Crime, Protection, Electronic Medical Records

## Introduction

Development rapid technology and information has change various aspect life including Health sector. One of the significant changes that is the emergence of the big data era. Big data is a collection of very large and complex data so that difficult For processed use method traditional data processing. In the health sector big data means collect and analyze information medical in scale that has not been Once There is previously. This is including personal health data which is source information most important about a person's health status in service health. The era of big data has arrived bring significant changes in various aspect life including in Health sector. Collection, processing and analysis of Health data in scale big own potential For produce knowledge new and innovation in Health

services. However Use of personal health data in the era of big data gives rise to various challenge laws and policies.

Related with matter the like existence divided health services on Public Health services and services in a way individual. In a relationship This doctor is a person who is needed and trusted For help in give and strive treatment to patients who are need a handler medical . Relationship between doctor and patient in giving Health services in general individual started at the time the first time a person patient come spatial practice with bring complaint will his health. Next a doctor will do a series inspection beginning in the form of the so -called interview with anamnesis which is then will done inspection physical leading to a diagnosis patient. Diagnosis results that determines (Arifin, 2020).

In today's digital era this, development technology information has revolutionize various aspect life humans , including in field health. Use record medical electronics at home Sick has become common standards, allowing patient data storage in a way more efficient and more accessible fast for power medical. However, at the same time with progress This also brings challenges law , especially related with personal data protection patient.

Circulating the explanation contained in Constitution Number 17 of 2023 concerning Health in the explanation of Article 173 Letter c, that what is meant by with record medical that is document containing identity data Patients , actions, examinations, treatments and other services that have been provided given to patient made with using the intended electronic system organization record medical. In case facility Health services not can to organize record medical in a way electronic Because obstacle technical , can used colleague non electronic medical until with obstacle finished as well as done input repeat record data medical on record system medical electronics (Bortnikov, 2021).

Implications law cyber crime against protection record medical electronics at home Sick become the more important. Threat electronic data security , such as theft identity and violation privacy, is problem that must be overcome with serious. Cyber criminal law, which includes rules and sanctions related crimes committed through internet network , become instrument important in protect integrity and confidentiality record medical electronics.

Cyber criminal law has role crucial in to uphold protection of personal data, including record medical electronics at home sick. With existence sanctions criminal for the perpetrator who committed access illegal or medical data misuse electronics, expected can give sufficient *deterrence* For prevent cyber crime in the sector health. However Thus, the challenge main in apply law cyber crime against protection record medical electronic is in determine jurisdiction and proof in cases violation . Because of the nature across internet borders, often difficult For determine where the crime is That Actually happened , and proof electronic can become complicated and requires skill special.

Therefore that , the steps need taken For strengthen framework law relevant cyber crimes with protection record medical electronics. This is involving cooperation between government, institution law, home sick, and expert technology information For develop more policies effective in prevent and handle cyber crime in the sector health. With Thus, protection to patient data can strengthened, and trust public to system digital health can maintained or even improved.

More carry on arrangement about record medical there is in the Constitution Number 17 of 2023 concerning Health in Article 296. Implementation record medical is responsibility facility Health services. Every power medical and health workers who provide individual health services must make record medical. Record medical must quick equipped after patient finished accept health services.

In some year lastly, it happened improvement significant in use record medical electronics at home sick. This is a response to progress technology information that allows storage and exchange information medical digitally. Record medical electronic speed up access to information patient, allowing coordination more care good, and improve efficiency operational. However, at the same time with benefit This also brings challenges new related with patient data security and privacy (Ustrytska, 2020).

In context development technology information in field health, there are also significant developments in telemedicine or service health distance far. Technology This allow patient For consult with doctor or power medical without must in a way physique present at home sick. Even though give convenience great accessibility , telemedicine also raises question law related with patient data privacy and security. Arrangement The use of personal health data in Indonesia is still face various challenges. One of them that is Not yet existence Constitution Comprehensive Personal Data Protection about Health. Although moment This there is a number of regulations that govern use of personal data as it is in Constitution Number 1 of 2024 concerning Change Second on Law Number 11 of 2008 concerning Electronic Information and Transactions and the Law Number 17 of 2023 concerning Health. Protection privacy and security of personal health data Not yet set up in a way comprehensive and law Number 27 of 2022 concerning Existing Personal Data Protection Not yet so maximum executed. The need for more regulation strict in arrange use and storage of patient data in context of telemedicine. Cyber criminal law can also applied in cases violation patient data security that occurs in telemedicine practice. However , the implementation law cyber crime in context health is also a must notice aspects ethical and practical. For example , in handle violation data security, important For consider interest health patients and possibilities impact negative from giving sanctions criminal to institution the health of the person concerned. Therefore that's a balanced approach between enforcement law and interests health public need taken in face challenge This. In addition, it is also important to Keep going develop expertise and capacity in field law cyber crime among power law and enforcement law. Special training and education in aspects related laws with technology information and health will help increase effectiveness Handling cases medical data breach electronics. Implications law cyber crime against protection record medical electronics at home Sick become the more relevant. Threat cyber security such as data theft and ransomware attacks can result in loss big , good for patient and also provider service health. Document record medical as contained in Article 296 of the Law Number 17 of 2023 concerning Health is owned by facility Health services. Every patient entitled For access information contained in document record medical and facilities mandatory health services guard security, integrity, confidentiality and availability of the data contained in document record medical.

One of challenge main in protect record medical electronic is security system information used For store and access the data. It is necessary steps strong technical skills,

such as data encryption and usage system advanced security, for protect information medical from unauthorized access legitimate. In addition, compliance to regulations and standards Applicable data security is also important For reduce risk violation. Effectiveness enforcement law cyber crime against violation medical data security depends on cooperation between institution enforcer law , provider service health, and parties related others . Good communication and exchange fast information can help in detect and handle violation with more efficient. However, in handle cases violation medical data security, it is also necessary to pay attention to principles right basic humans and privacy. Sanctions criminal must given with proportionality and taking into account interest health public as well as rights individual. Implementation of Health Development includes Health Efforts and resources its power must done in a way integrated and sustainable in various field and progress knowledge knowledge and technology has improve level Community Welfare Awareness will life healthy. This is influence increasing need services and equity that include power facilities and infrastructure Good amount and also quality (Roscini, 2019). Therefore That required arrangement For protect giver and receiver service health services. In facing the complexity challenge medical data security electronics, cooperation cross sector between government , institution health, and perpetrators industry technology information become key. Steps preventive like training cyber security for staff medical and regular updates on system information will help reduce risk violation. With Thus, protection to record medical electronic can improved, and trust public to system digital health can maintained.

## **Methodology**

### **Types of research**

Types of research used in study This that is legal empirical . Juridical that is to study draft normative or regulation legislation , whereas empirical namely examine the existing facts related with analysis law cyber crime against protection record medical electronics at Mitra Medika Premier Hospital Medan. Reviewed from development life and changes rapid transformative so For to organize development and change law positive No can functioning in a way effective. From various problem life , branch knowledge social and especially sociology need For follow play a role in finish it Then law conceptualized in a way sociological as a symptom empirical that can observed in life.

### **Method of collecting data**

Study This use method data collection carried out with studies field research and library research . Library *research* is obtained through read, study and study books, rules legislation, journal or data in the form of Library materials while studies field namely done with method interview.

### **Data Types**

Data presented obtained from data sources that include primary data sources and secondary data sources :

- **Primary Data**

Primary Legal Material, namely data obtained through regulation legislation namely Constitution Number 17 of 2023 concerning Health, Law Number 27 of 2022 concerning

Personal Data Protection , Law Number 1 of 2024 concerning Change Secondly , under the Law Number 11 of 2008 concerning Information and Electronic Transactions and Regulation of the Minister of Health Number 24 of 2022 concerning Record Medical.

- Secondary data

In the form of documents written, regulations legislation and related literature with object study This.

## **Result and Discussion**

### **Implications of Cyber Criminal Law on The Protection of Electronic Medical Records In Hospitals**

#### **Rules and Regulations Related Health Data Protection**

Health data protection in Indonesia is increasingly reinforced with presence Constitution Number 27 of 2022 concerning Protection of Personal Data. This Act in a way firm arrange obligation House illness and facilities health in guard confidentiality as well as personal data security patient, including record data medical electronics (RME). In law cyber crime, threats against RME which causes personal data leak patient can charged sanctions criminal as set up in Article 65 of the Personal Data Protection Law. The existence of this law give runway law in face threat crime cyber in the field health. In its implementation, the Personal Data Protection Act No only focus on personal data protection in a way general, but also includes provision specific related to sensitive data such as health data. Personal Data Protection Act give protection on health data patients accessed in a way electronics, cyber attacks on RME could cause impact big, including lawsuit law from patient to House Sick If happen data leak. This is make health data protection as issue priority in home policy Sick. Regulation Government Number 71 of 2019 concerning Implementation Electronic Systems and Transactions also become runway important law in record data protection medical electronics. Implementation system electronic including House sick , mandatory ensure security system electronic House Sick from all form cyber threats. Cybercrime that is damaging patient data integrity Can categorized as violation cyber crimes imposed sanctions based on the Personal Data Protection Act.

Implications law criminal to violation privacy of record data medical is also regulated in Constitution Number 11 of 2008 concerning Information and Electronic Transactions (ITE Law) which has experience a number of changes, including with presence Constitution Number 19 of 2016 and amendments second Law Number 1 of 2024. Based on Article 30 of the ITE Law, every action access illegal to electronic data , including EMR, can charged criminal imprisonment and fines. Cyber crime cases often occurs in the field health become the more general, so that existence regulation is very important For press risk patient data leak (Zhang, 2023).

Health data protection need support internal house policy sick. Regulation of the Minister of Health Number 24 of 2022 concerning Record Medical strengthen standard security in RME management. Internal house policies Sick must in accordance with standards set by RME regulations, including use technology encryption and management access against RME. Failure in apply steps security cause House Sick responsible answer in a way civil, criminal and administrative.



From the thing mentioned above, the regulations used by the Mitra Medika Premier Medan Hospital are related to Health data protection implements regulations that refer to the Law Number 17 of 2023 concerning Health, which regulates confidentiality record medical, Law Number 27 of 2022 concerning Protection of personal data, Regulation of the Minister of Health of the Republic of Indonesia Number 24 of 2022 concerning Record Medical, as base patient data protection and internal hospital policies the pain that strengthens compliance to the above regulations, including standard operational management procedures (SOP) record medical electronics (RME).

### **Implications of Cyber Crime Law on Protection Record Electronic Medical in Hospitals**

Record medical electronics (RME) at home Sick is innovation important in health data management, but also opens up gap for crime cyber. Cyber action against RME may result in patient data leaks of a nature privacy, which results in existence implications law criminal. Violation to RME security can charged sanctions criminal Constitution Number 27 of 2022 concerning Personal Data Protection which protects personal data, including health data. Cyber actions such as *hacking* and *ransomware* against RME can also charged sanctions in Constitution Number 1 of 2004 concerning Change Second Constitution aNumber 11 of 2008 concerning Electronic Information and Transactions. Implications law cyber crime against RME protection set in Article 30 of the ITE Law which states that access without permission to system electronics, including RME, are act criminal offences that can be threatened with punishment crime. Cybercrime at home Sick has experience improvement in a way significant, especially in matter patient data theft through method *phishing and malware*. The perpetrators can charged sanctions criminal in the form of sanctions criminal prison and criminal fine temporary House pain that is not own system adequate security can also be caught sanctions administrative. Personal Data Protection Act give protection addition on health data through mechanism more supervision strict. Hospital must implement standard security tall For protect RME from unauthorized access valid. If House Sick fail carry out his/her obligation, home Sick can sued in a way civil by the injured patient, in addition to fine administrative. This is show importance internal house policy Sick in prevent data leaks caused by cybercrime. In addition to sanctions criminal to perpetrator cyber crime, implications law criminal can also experienced by the house neglectful illness in protect RME. Failure House Sick in apply steps adequate security, such as encryption and restrictions access, can cause demands law. If patient data is leaked due to cyber actions that can prevented, home Sick can sued based on Article 26 of the Personal Data Protection Law and Article 32 of the ITE Law, which regulates not quite enough answer organizer system electronics. Development technology and cyber measures are needed existence improvement regulation law cyber crime in protect RME. Existing regulations are essential For anticipate threat latest against health data. Enforcement more laws firm and more supervision strict, required For ensure that RME is protected from cyber crime is increasing advanced.

## **Obstacles And Barriers In Protecting Electronic Medical Records At Mitra Medika Premier Hospital Medan**

### **Advantages and Challenges Use Record Electronic Medical at Mitra Medika Premier Hospital Medan**

Use record medical electronics (RME) at home Sick offer Lots advantages and challenges, one of which is is efficiency in patient data management. RME makes it easy access information health patient for doctor as power medical and manpower health others, so that speed up taking decisions. In addition, RME can also reduce error medical caused by negligence manual recording, so that increase quality service health at home Sick. RME also provides profit in matter security and protection of patient data. RME enables implementation encryption and access limited to only given to party authorized, so that can reduce risk data leak . With existence audit trail system, every data access and changes can be monitored, so that create greater transparency and accountability Good in management record medical. Another advantage of RME is improvement coordination between power medical. In the long term long, the use of RME can increase effectiveness service health and reduce time Wait patients, who can increase satisfaction patient to service House Sick. From health data protection and security in management record medical electronics at Mitra Medika Premier Hospital Medan in manage data security, there is various advantages and disadvantages in use Record Electronic Medical at Mitra Medika Premier Hospital Medan. Challenge big in RME implementation is one of them is high cost For installation and maintenance system. Hospital often face constraint significant budget when try RME system, especially House more pain small or in the area remote. Cost the covers investment beginning, training power medical, as well as routine maintenance. In addition other challenges faced is resistance from power medical who already used to with manual system. Medical personnel and personnel health feel not enough comfortable switch to RME because change need time For adapt. In addition, some power medical and manpower health feel that RME usage can bother interaction direct with patient Because time used For operate system. Cyber security is also becoming challenge main in RME usage. Cyber crimes such as hacking or malware can endanger confidentiality of patient data. Although RME provides more security Good compared to manual system, still There is risk data leak if No balanced with system strong security and regular updates. For that, house Sick must Keep going develop reliable and adequate IT infrastructure use protect patient data.

### **Obstacles and Barriers in Protecting Record Electronic Medical at Mitra Medika Premier Hospital Medan**

Obstacles and barriers in protect record medical electronics (RME) at home illness is very diverse especially at Mitra Medika Premier Hospital Medan, one of them is lack of infrastructure adequate technology. Many houses Sick especially in the area remote or who has budget limited, not yet capable provide system strong security For protect patient data optimally . Limitations infrastructure This make RME system more prone to to cyber threats and data loss due to failure technical.

Another obstacle is lack of understanding and awareness about importance health data protection among power medical, manpower health and management House sick. Even though regulation about data protection already there is, as arranged in Constitution Personal Data Protectio , its implementation Still weak in some House sick. Lots of energy medical and manpower health that has not been understand fully importance guard confidentiality record medical, which has an impact on the potential data leak due to negligence.

Another problem is challenge financial in guard RME security. Procurement device soft advanced security need cost big. In addition, the cost maintenance and updates system security in a way periodic often neglected by the house the pain that is experienced limitations budget. As a result, although There is intention For guard data confidentiality, home Sick often difficulty in provide source sufficient power For security cyber.

Apart from being constrained cost, resistance to technology new also become obstacle in protect RME. Medical personnel and health workers health feel No comfortable with use system electronics and more choose manual method. This is create a situation where some power medical and manpower health using RME, while others remain depends on the system traditional, so that cause No consistent in data protection and improve risk leakage.

On the other hand, the lack of integrated policies and regulations in a way good to be too inhibitor in RME protection. Although there is various Constitution related health data protection, implementation in the field often lacking effective. The absence of clear guidance about management data security at the level House Sick cause various policies implemented No consistent, creating patient data more prone to to abuse. Cyber threats are increasing sophisticated also become constraint big . With development technology, actors cyber crime continues develop method new For access RME data, such as difficult use of malware detected. Cyber security in many House Sick especially at the Mitra Medika Premier Hospital in Medan, there are still Not yet fully Ready face cyber threats, so that RME protection requires cost big in security and training power medical.

## **Cyber Crime Prevention Efforts In Protecting Electronic Medical Records At Mitra Medika Premier Hospital Medan**

### **Threat Security Faced In Management Record Electronic Medical at Mitra Medika Premier Hospital Medan**

Threat security in management record medical electronics (RME) at home sick, including at Mitra Medika Premier Medan, is very important issue. Cyber threats are becoming one of the threat the main thing that will be faced by the house sick. Threat like *malware, ransomware and phishing* the more often occurs in the system information health. Threats the No only bother operation House sick, but also can cause loss of patient data . In addition to cyber threats, threats internal security such as negligence staff is also one of the factors that influences RME management. Medical personnel, medical personnel health or staff administration House Sick often not on purpose open gap security, for example through use of weak passwords or data access via devices that are not safe. Negligence like This can cause data leak that should have been protected with strict. Use mobile devices for access record medical also causes risk alone . Lots of energy medical and manpower health use device personal like a smartphone for access patient data, which is sometimes No own



system adequate security. This is enlarge opportunity the occurrence access No legitimate or data theft through mobile devices. Mitra Medika Premier Hospital Medan is also facing challenge related fulfillment standard continuous data security developing. Mitra Medika Premier Hospital Medan is still is at in the process of adaptation to regulation more data security strict, such as the Personal Data Protection Act. Implementation adequate technology For comply regulation This need sufficient time and cost big. In addition, integration between RME system with other systems at home sick can also become gap security, When various different systems integrated For facilitate system Work House sick, often occurs problems that result in gap security. This is can exploited by the perpetrator cyber crime for attack system and access patient data in a way illegal. For face threats This, Mitra Medika Premier Hospital Medan needs Keep going renew infrastructure IT security and improve awareness staff related practice security. One of the method For reduce threat the is with give regular training to staff House Sick about importance data security and how method guard confidentiality record medical patient. Improvement awareness This expected can reduce risk data leak due to negligence.

### **Prevention Efforts Cyber Crime In Protecting Record Electronic Medical at Mitra Medika Premier Hospital Medan**

Prevention efforts cyber crime in protect record medical electronics (RME) at home Sick become priority important, considering increasing cyber threats targeting health data .One of step main taken by the house Sick is strengthen system digital security through data encryption. This is important in protect patient data from access No valid, where the information sent through network encrypted so that only party authorized to be able to read it. This is prevent party third utilize data effectively illegal. Regular training for power medical, manpower health and staff House Mitra Medika Premier Medan Hospital is also a part important from effort prevention. In general there is various action cyber crime at home Sick happen consequence negligence humans, such as use of weak passwords or access system through devices that are not safe. Therefore that, regular training regarding awareness security cyber can help power medical, manpower health and staff House Sick understand importance guard data security and prevent cyber attack. Prevention efforts others that are also important is implementation policy access limited. Access to record medical electronic must restricted only For authorized personnel. Each access to system must tracked and audited in a way periodic For ensure that No There is suspicious activity. With Thus, the house Mitra Medika Premier Medan Hospital can with fast detect and respond potential cyber threats that attempt access data without permission. As effort prevention cyber crime in protect record medical electronics at Mitra Medika Premier Hospital Medan, there are Collaboration between institution enforcer law and sector health in management record medical electronics at the Mitra Medika Premier Hospital in Medan which was carried out through Reporting If There is data breach to Hospital Legal Committee and to the Ministry of Communication and Information and the Police, Coordination of the Health Service in socialization Regulation and Membership of PERSI and ARSSI North Sumatra.

## Conclusion

1. The regulations used by Mitra Medika Premier Medan Hospital are related to Health data protection implements regulations that refer to the Law Number 17 of 2023 concerning Health, which regulates confidentiality record medical, Law Number 27 of 2022 concerning Protection of personal data, Regulation of the Minister of Health of the Republic of Indonesia Number 24 of 2022 concerning Record Medical, as base patient data protection and internal hospital policies the pain that strengthens compliance to the above regulations, including standard operational management procedures (SOP) record medical electronics.
2. From health data protection and security in management record medical electronics at Mitra Medika Premier Hospital Medan in manage data security, there is various advantages and disadvantages in use Record Electronic Medical at Mitra Medika Premier Hospital Medan. The advantages in use Record Electronic Medical at Mitra Medika Premier Hospital Medan, namely Process Efficiency : Making it easier patient data access and recording, Data Accuracy: Reducing manual error in logging, Better Security: System electronic allow tracking data access and convenience Collaboration: Data can be accessed across HR/ departments / work units . While weakness in use Record Electronic Medical at Mitra Medika Premier Hospital Medan, namely: Dependence on Technology: Disturbances technical can stop operational , Cyber threats: Record medical electronic become the target of attacks and Costs High Implementation: Maintenance systems and training need investment significant.
3. A number of form possible violations happen in management record medical Electronic access at Mitra Medika Premier Hospital Medan is Unauthorized Access: When the officer logs in health that is not present entrusted to the officer health other For replace Data Entry and Data Retrieval: Patient Data used by the party No authorized example Photo results laboratory. Efforts made by Mitra Medika Premier Medan Hospital in protect health data includes: Strengthening Infrastructure Technology: Implementation of firewalls, antivirus, and data encryption, Routine Audits: Ensuring system walk in accordance standard security, Improvement Awareness Staff: Training regular related data protection and Update/ development system technology information specifically related to data security.

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