Turkish Journal of Computer and Mathematics Education Vol.12 No.6 (2021), 5175-5180

Research Article

Data Preservation Framework for E-Healthcare: A Requirement of consumers of IoMT Devices

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Article History: Received: 10 November 2020; Revised 12 January 2021 Accepted: 27 January 2021; Published online: 5 April 2021

Abstract: Health is wealth, everyone knows this fact but only few people follow. In today's technological modern world, every person has become so busy that he does not have time for himself, he cannot take care of his health even if he wished. Today's human is compelled that he will have to grow step by step with technology. So nowadays people have also given the responsibility of taking care of their health to the technology. In today's time, humans have a lot of digital health care devices and their use is increasing due to lack of time. On the other hand, the use of these devices accumulates the patient's own sensitive personal details, which can cause a great harm to the person due to misuse. In such a situation, only a strong law can help. Here, it is the responsibility of Indian law and order to prepare such a framework by which the sensitive personal data of the citizen is protected. Through this paper, it has been analyse how active the Indian Legislature is in this area and what it is trying to do

Keywords: : IoMT, Health care, data privacy, data protection, sensitive data, preservation, legal, judiciary

1. Introduction

A healthy mind lives in a healthy body only or a healthy body has a healthy mind and a healthy mind is a tool for success. Most people having these above thoughts. Indeed, an individual can survive with a healthy mind and body only

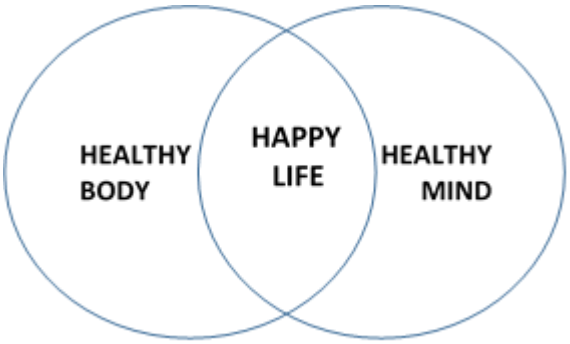

Figure 1 : shows definition of health

Health can be defined as a state of both emotional and physical happiness but they do not have much time to self-care they do not have much time to spend for their regular check-ups, examine and consultancy. People have a lack of timings so they are not able to maintain the self-care record like Blood pressure, Diabetes, Heart Beat, Weight, Temperature, etc. even they don't consult with doctors regularly. The facility facilitates as to care our health called healthcare

2. Preamble of Health Care System

As per the above definitions, health can be categorized into two forms Mental Health, Physical Health. Mental health is a state of mind that can be set by the spiritual positivity of individuals. It's all about how people feel, think and behave. Like Panic disorder, Obsessive-compulsive disorder, Depression, bipolar disorder, Eating disorders, Personality disorders, Post-traumatic stress disorder, Psychotic disorders, etc. On the other hand,

Physical health refers, how the physical body well operates? It can be maintained by regular exercise, good eating habits, drink healthily, etc.

In, a specialized agency of the United Nations established World Health Organization (WHO) is a responsible for international public health. Its head quarter established in Geneva, Switzerland, with six semi-autonomous regional offices and 150 field offices worldwide.

In 1948, the World Health Organization (WHO) Trusted Source defined health with a phrase that modern authorities still apply [21].

"Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity."

In 1986, the WHO Trusted Source made further clarifications [21]:

"A resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities."

In 30 March 2021, India noted a population [24] of 1,390,049,468 which founds 17.25% of the global population. As per this rate of growth, India is likely to become the most populated country by 2050[24]. Most people are aware of social and environmental problems caused due to overpopulation, however, little bits of them are attentive to its adversative impact on health. From the above data, Do we think that our coming generation will get doctors and well healthcare?

Only to avoid the problem of unavailability of healthcare, people adopting the technology which is known as the Internet of Medical Things (IoMT). IoMT is a unified network system of surrounded objects/devices, with identifiers, in which communication without anybody's involvement is possible using standard and interoperable communication protocols. To progressive related, secure, and smart IoMT-based system for our country's Economy, Society, Environment, and global needs.

Now a day's universal health coverage (UHC) [23,1] has appeared as a central authority of the World Health Organization. India will positively become the High-Level Expert Group (HLEG) [23,2] on Universal Health Coverage which was established by the then Planning Commission, by the instruction of emerging a framework to provide accessible and affordable healthcare to all citizens. Indian government launched a scheme Ayushman Bharat which vow India to reach UHC's manifest. It requires a strong and well-run health system. A patient must have a unique Health ID, having health record, doctor's details, etc.

3. How IoMT devices Works? :

There are following phases Internet of Things (IoMT):

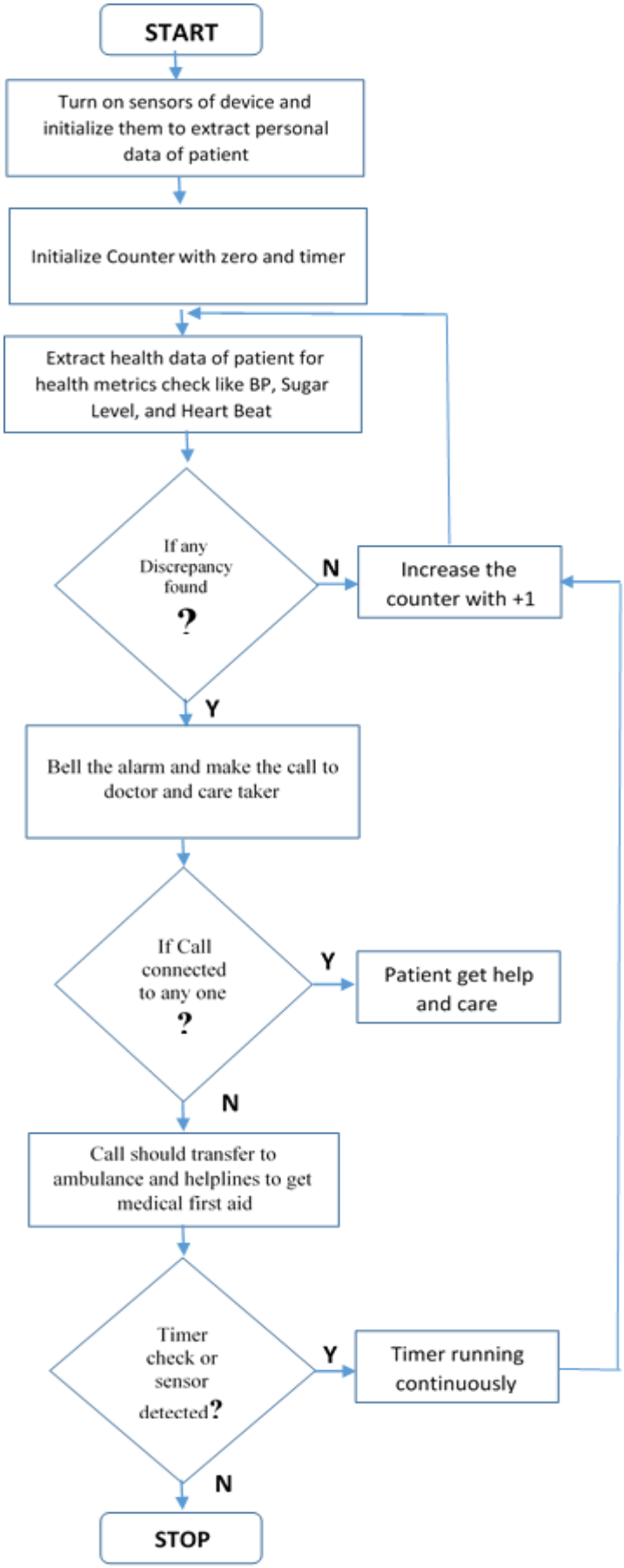

Figure 2 : Flow chart showing working of IoMT Devices

In the given figure, the first phase of the flowchart started with the reading of the data, in which the sensors start extracting the data after the initialization. It collects the data copies and analysis and there is a probability that it might give access to anyone's private data to the wrong entity. Thus, this proves that technology is helpful yet harmful. Now it is the responsibility of the Indian judiciary system to protect its natives from any frauds and to come up with strict policies against those frauds. The flowchart will be terminated on the contact of the doctor or caretaker. If somehow the control is not able to contact to doctor it will automatically be transferred to emergency helplines.

Today's human being has become completely dependent on technology, whereas technology does not have security in it. The government has done something very tough to avoid all this fraud.

4. Legal and Regulatory Framework for use of IoMT devices

From the beginning of IoMT, it is the responsibility of Indian jurisdiction to re-capsulate the existing legal system. The Indian jurisdiction system becomes an essential component of the policy specifies the authority, which the organization has undertaken the preservation of the data, e.g. laws, legislation, policies, and mission. Various aspects should be considered to move forward towards IoMT.

4.1 Preservation of data in term of data Security

The IoMT device's system depends on the collection of data, so they Create separate databases for data collection this collective data is very sensitive and depends on AI prediction of consumer behaviour like plotting of personal habits, Geo-tracking, blood group, biometrics, etc. This type of sensitive data needs to safeguard against cyber-attacks or theft. Information concerning the activity patterns of consumers can be mapped through the data collected to accurately predict the activities of a person, and this power can be susceptible to misuse in the wrong hands.

For such type of data collection of user's government ask for the notice and consent letter to collect data as required in concern of current and proposed law on privacy in India. Maximum privacy laws also require giving an option to the user to withdraw consent, change the information in case of a mistake, etc.

4.1.2 Information Technology Act, 2000 [25, 1]

The data protection of individual personal information are covered under the Information Technology Act, 2000 ("ITA") and the "Reasonable practices and procedures and sensitive personal data or information Rules, 2011" ("Rules") issued under Section 43A of the ITA (as amended) [25, 2].

Section 43A of the ITA deals with the protection of electronic data and provides that when a body corporate is slack in implementing and maintaining 'reasonable security practices and procedures in relation to any 'sensitive personal data or information that it deals, possesses, or handles in a computer resource that it owns, operates or controls and such negligence causes wrongful loss or wrongful gain to any person, such entity shall be liable to pay damages by way of compensation to the person so affected.

Further, Section 72 of the ITA, enunciates penalty for breach of the confidentiality and privacy of the data collected [25, 3]To ensure the privacy and protection of the data collected, the IoMT service provider can have specifically drafted privacy policy detailing the private information that is collected by the service provider, the scope and extent of the use such information is put to and the steps taken to ensure the protection of the collected information.

4.1.3 The Personal Data Protection Bill, 2019 [20]

The Ministry for Electronics and Information Technology (MEITY) made a committee of 10 members under the leadership of retired Supreme Court judge B.N. Srikrishna for making recommendations for a draft Bill on the protection of personal data. The MEITY formed this committee after the revolutionary decision of SCs in the Justice KS Puttaswamy case, which alleged that privacy is a constitutional right. After all the contributions of members of the committee for a year, the committee submitted its report titled "A Free and Fair Digital Economy: Protecting Privacy, Empowering Indians" along with the draft bill on personal data protection. There are some silent features includes in the draft bill:

1. Committee divides the sensitive data into three categories: Personal Data, Sensitive Personal Data, and Critical Personal Data.

1. If data collected have to be disclosed, shared it will be processed within the territory of India.
2. There is not any presence of Data fiduciaries or data processors in the territory of India.
3. Data have all authorization for analysis or any type of conversion.

4. There is a Restriction on the transfer or share of any type of Personal Data outside India.

4.2 Intellectual Property Act [24]

The Intellectual Property Act covers Copyrights, Trademark, and Patent. In these three patent acts important role in dealing with technology. A limited right granted by the Government to the inventor to eliminate others to use, make and sell an invention is a specific time called Patent. A patent can also be an improvement in their existing Invention.

Patent law introduces in India in 1991 [24,1] when the Indian Patents and Designs Act, 1911[24, 2]was passed. The current Patents Act, 1970 came into force in the year 1972, amending and consolidating the existing law relating to Patents in India. As IoMT has become so popular, there are so many devices that have to communicate with each other via several commercial sources Wi-Fi, Bluetooth. Users can access or share their data with the help of so many other devices which needs standardization of technology and a unified platform to add many devices. If that technology is patented, then it will be a barrier to the development of IoMT. As any party adopting standardized technology will end up trespassing patents of third-party patent proprietors. There are some Steps for patent [15]:

1	Filling application with full specification.
2	Publication of patent (18 Months).
3	FER Launch.
4	Response to FER.
5	Acceptance / Refusal.
6	Grant (if Approved).

4.3 Indian Contract Act [19]

This is the human interaction less facility to do a contract for the sale of goods using IoMT Devices. An e-contract can formulate a valid and bond between the parties under the **Indian Contract Act** if it achieves the prerequisites of a valid contract as provided under **Section 10** of the Act. With IoMT, the expansion of parties to contract, contract law is outdated when it originates to deal with issues increases by the Internet of Things. There are some of the probable problems can be:

(1) Can these devices treats as agents?

(2) How the court will judge consumer agreement when contracts are arrived at through IoMT devices when not provided with contract terms before each purchase made by the device?

(3) In absence of a private contract, what terms would govern the interrelation between the multiple device manufacturers which e-compute with each other while providing services to the user?

The augmented interconnectivity produced by the IoMT carries along with it certain concerns including problems prior like information irregularity and Contract Disaffection in consumer contracts to the benefit of businesses.

With IoMT, there is little or no possibility for consultations to be held between the device manufacturer and the users concerning the terms of e-contracts. This may inspire clients to continue to fail to evaluate and understand contract terms, lead businesses to continue to include one-sided contract terms in form contracts, and inspire contractual misuse. The types and amount of data that will be generated by IoMT devices will increase companies' knowledge about the health, lifestyle, and everyday activities of consumers and individuals in their households and populations. The existing legal framework applicable to form contracts is not likely to provide satisfactory protection to consumers who enter into contracts for the sale of goods by using IoMT devices, and the new, automatic, and interface-free contracting environment created by the IoMT exaggerates existing problems and creates difficulties in consumer transactions in a manner that compels a revision of applicable legal rules.

5. Conclusion

IoMT sensor works to collect the data of consumers basically, it can be harmful to the users. Again it's become a very sensitive issue to protect citizens against frauds. For the same the Indian judiciary system drafts policies and passes the bill, which can be helpful to keep safe the consumer. By these policies, we can form various active digitized systems which can be operated by sensors and digital signals only. Whatever law the Indian law system has made to keep the data safe, all of us should understand them very well, so that no one can cheat us. It is our responsibility that we understand all these laws very well. In this paper, only the laws related to the protection of data are mentioned.

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