JOURNAL LA SOCIALE

VOL. 04, ISSUE 01 (020-025), 2023
DOI:10.37899/journal-la-sociale.v4i1.744

Evaluation of Patient Data Protection in the Implementation of the E-Health Program in the City of Surabaya

Suci Megawati[1], Deby Febriyan Epriliantor[1], Muhamad Arif Mahdiannur[2], Muhammad Kharis Fajar[3], Rizky Muhammad Sidik[3]

[1]Department of Public Administration, Faculty of Social Sciences and Law, Universitas Negeri Surabaya, Indonesia
[2]Science Education Department, Faculty of Math and Science, Universitas Negeri Surabaya, Indonesia
[3]Sports Coaching Education Department, Faculty of Sports Science, Universitas Negeri Surabaya, Indonesia

Corresponding Author: Suci Megawati
Email: sucimegawati@unesa.ac.id

Article Info

Article history:
Received 8 December 2022
Received in revised form 30 January 2023
Accepted 9 February 2023

Keywords:
Evaluation
Patient Data Protection
E-Health

Abstract

The city of Surabaya has implemented the e-health program since 2014. Protection of patient data is the most important aspect in evaluating e-health health programs. The research objective is to analyze the evaluation of patient personal data protection in e-health programs. The research method uses descriptive qualitative with a case study research strategy. Data collection techniques used a mixed-method approach. The research results show that the protection of patient data in the implementation of the E-Health Program in the city of Surabaya is reviewed from indicators (1). Guarantee of Patient Data Confidentiality service recipient version; (2). E-Health Application Security; (3). Efforts to Convince Users in Using E-Health; (4). E-Health Service Application Security from Irresponsible Parties; (5). Patient Personal Data Guarantee program implementation version.

Introduction

Health is a fundamental thing that must be realized through guarantees of safe and quality health care (Ariany & Ningsih, 2020). As an effort to improve the quality of health services, digital technology is an alternative policy for all countries to encourage the achievement of welfare and the degree of public health through improving the quality of health services (Wierda et al., 2018).

One of the most important aspects of implementing a program in the health sector is the protection of health data and information for service users. Data privacy and protection, especially for patients, is an important matter for every country to pay attention to because the health sector is inseparable from potential violations of personal data protection (Wierda et al., 2018). Moreover, currently patient data is not only used in conventional registration, but uses information technology assistance to process patient data so that it makes it easier to store, search, and other needs in making medical decisions (Zakariya, 2021). The State of Indonesia regulates this in the Regulation of the Minister of Communication and Information No. 20 of 2016 concerning Protection of Personal Data in Electronic Systems (Permenkominfo PDPSE) which regulates the protection of personal data. Further details regarding patient personal data that must be kept confidential are also regulated in Article 10 paragraph (1) of Minister of Health Regulation No. 269/Menkes/Per/III/2008 Concerning Medical Records (Rosadi, 2016).

One of the health programs that has been implemented in Indonesia is the e-health program in the city of Surabaya. E-health is a health information system that has been directly integrated

ISSN 2721-0960 (Print), ISSN 2721-0847 (online)

with data from the Surabaya City Population and Civil Registry Office which functions to make it easier for the public to register at health facilities (Prabowo et al., 2020). The Mayor of Surabaya launched and inaugurated e-health on November 10, 2014. The e-health application can be accessed by the people of Surabaya City through e-kiosks, websites (https://ehealth.surabaya.go.id), and also through applications that can be downloaded via playstore. The e-health program eliminates the physical registration queue system so that patients can register online to get certainty of service time (Putra & Prabawati, 2019).

The e-health program has seen how other districts or cities can effectively and efficiently utilize available resources and technology to improve medical processes between organizations and patients with better quality. However, the service process using the e-health program will collect a number of patient personal data and raise new legal issues, namely the extent to which health service providers can protect patient personal data which can be disseminated more easily through advances in information and communication technology. This research will examine and describe the evaluation of patient personal data protection in e-health programs

Methods

This research uses a qualitative descriptive approach with a case study research strategy. Data collection techniques used a mixed-method approach. Questionnaires were distributed to 175 respondents from Surabaya City residents and in-depth interviews with E-Health program implementers, as well as secondary data through journals, research reports, regulations, and encyclopedias, both printed and electronic. The data analysis method for this research is qualitative. Through analysis at the time of data collection, capturing the essence of the research objectives through the sources that have been collected. Then re-analyze the collected data as raw data that needs to be identified with each other. This activity includes data minimization, visualization, validation, and drawing conclusions.

Results and Discussion

As a city that continues to move to provide information technology-based innovations to facilitate services to its people, Surabaya has an e-health program that has been implemented since 2014. Protection of patient data is the most important aspect in evaluating e-health health programs. This can be studied through two classifications, namely from service recipients and service providers, an explanation of each classification is identified. First, the results of data in the field by the service recipient community have important aspects that become benchmarks for evaluation so that it can be stated that patient data is truly protected and e-health is declared effective. Among them are:

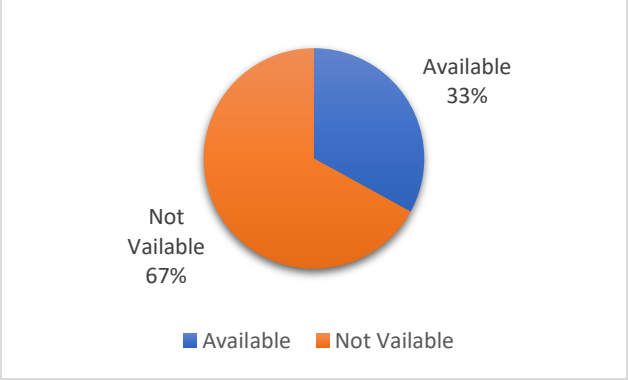

Figure 1. Patient Data Confidentiality Guarantee Diagram

Based on the pictures. 1 in detail shows that in health services using e-health services, the majority of people/respondents gave no answer as many as 116 respondents or 67%. This is

ISSN 2721-0960 (Print), ISSN 2721-0847 (online)

possible because some respondents have never used/know to use e-health services, so they provide that answer. Meanwhile, 58 respondents or 33% answered that there was a guarantee of confidentiality of patient's personal data using e-health services at puskesmas and hospitals in the city of Surabaya.

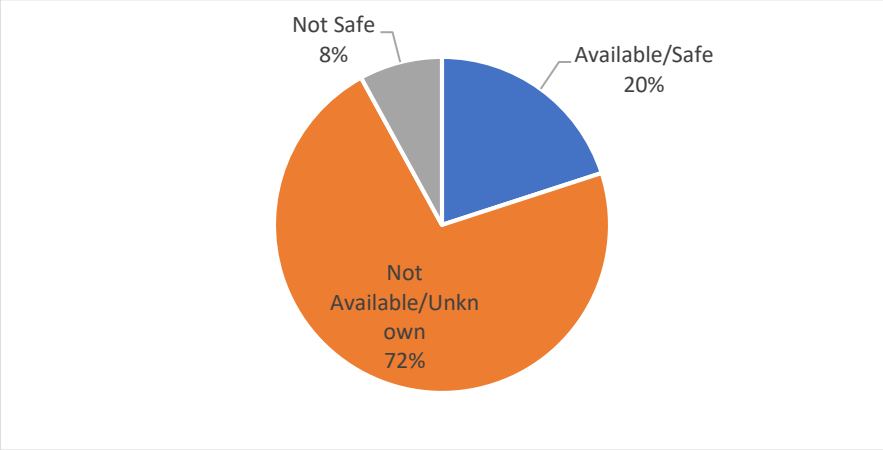

Figure 2. e-health Application Security Diagram

Based on the pictures. 2 in detail shows that health services use e-health services related to application security, most of the respondents gave answers that did not know as many as 125 respondents or 72%. This is because the respondents have never/know to use e-health services. Meanwhile, 35 respondents or 20% answered that e-health service applications were safe to use, and then 14 respondents or 8% answered that e-health service applications were not safe or easily hacked by irresponsible parties.

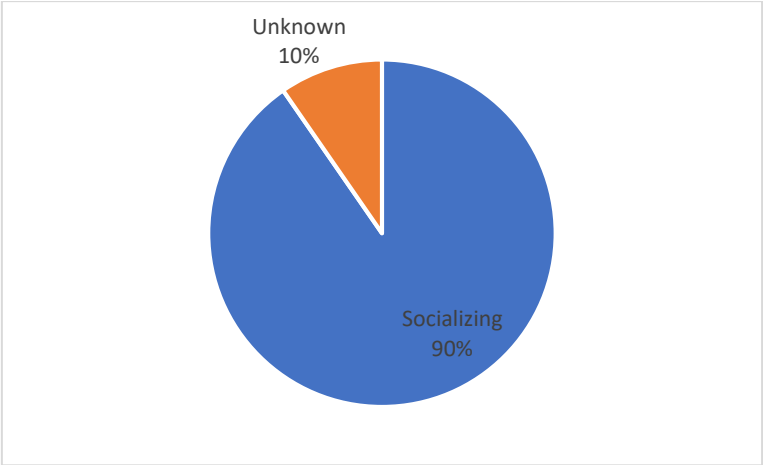

Figure 3. Diagram of Efforts to Convince Users in Using e-health

Based on the pictures. 3 in detail shows that the majority of respondents do not know the efforts that have been made to convince users/communities in using e-health services, namely 121 respondents or 70%. Meanwhile, as many as 53 respondents or 30% have given answers to the efforts that have been made, namely through socialization activities either directly, through advertisements on TV, through social media, or pamphlets/banners to convince users/communities in using e-health services at health centers and hospitals in the city of Surabaya.

In the process of implementing the e-health program, of course there will be obstacles and obstacles in the implementation of services. The results of the data from respondents' answers by service users or the public, the answers are collected and it can be summarized that there

ISSN 2721-0960 (Print), ISSN 2721-0847 (online)

are several obstacles related to e-health services at puskesmas and hospitals in the city of Surabaya. Some of these obstacles and obstacles include a) more complicated services due to unclear SOPs, b) lack of socialization of e-health services, so that many people do not know about them, c) people who are still technologically illiterate, and d) limited infrastructure and internet networks . Through this, respondents submitted suggestions for improvements to improve e-health applications, as follows: a) service mechanisms were made easier and clearer (SOP), b) carry out more equitable outreach, c) improve e-health applications more easily and practical to use, and d) pay more attention to data security. It is hoped that some of these suggestions for improvement can be considered by related parties for a more optimal implementation of e-health services at health centers and hospitals in the city of Surabaya.

Second, the results of data in the field by the implementor or service officer. Of course there are important aspects that become benchmarks for evaluation so that it can be stated that patient data is truly protected and e-health is declared effective. Among them are:

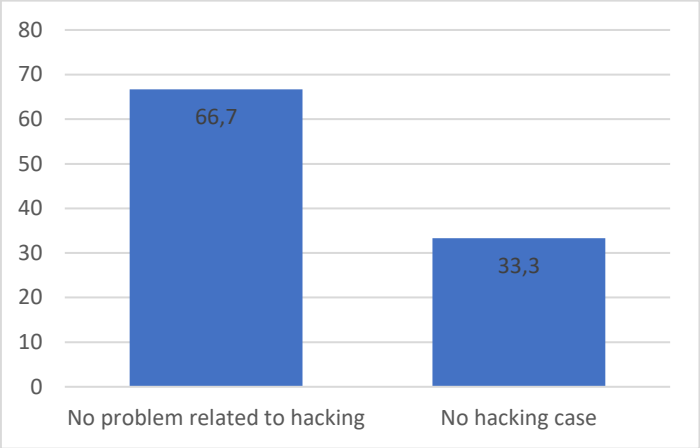

Figure 4. Graph of E-Health Service Application Security from Irresponsible Parties

From the results of the data that has been collected, it shows that 66.7% of e-health services so far have not had any significant problems, especially problems related to hacking. With the existence of a cloud computing-based Single Sign On (SSO) system using Security Assertion Markup Language (SAML) products that connect users with web applications in the form of portals can help maintain privacy and data integrity. SSO technology itself is an authentic system for users that can protect against the login process, sending data, and accessing data (Ramadhani, 2015). So that it can be ensured that patient data can be protected, but attention to maintaining the security of e-health applications must still be carried out.

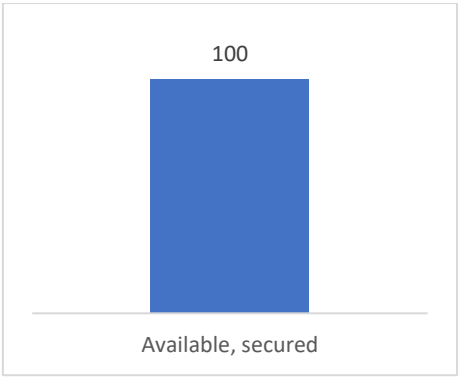

Figure 5. Graph of Patient Personal Data Guarantee

ISSN 2721-0960 (Print), ISSN 2721-0847 (online)

From the results of the data that has been collected, it shows that the implementor guarantees that patient's personal data can be protected by 100%.

Through these 2 graphs, the form of duties and functions carried out by officers in the mass operation of e-health is in the form of program socialization efforts so that the program is conveyed and utilized evenly among the public. In more detail, the following is attached: there is socialization, intensified through the media in the form of brochures and communication between individuals. Furthermore, 33.3% of the socialization distribution was carried out in various health centers in the city of Surabaya directly when there were people or users who needed information. In addition to the scope of the puskesmas, the Surabaya City Government conducts outreach outside the scope of the puskesmas covering each village, local schools and social media that utilizes WhatsApp and Instagram applications. Furthermore, 66.7% indicated that outreach was carried out through the posyandu in the sub-district or village or directly at the health facility before or when the patient arrived at the puskesmas. Socialization is carried out by medical records at certain hours when patients arrive or are waiting for an examination at the puskesmas so that socialization information can be received evenly. However, socialization regarding e-health to the community encountered obstacles, namely the lack of understanding of the community from the time the socialization was delivered, this was due to human resources or the community being less information literate so that the target of socialization was diverted to young people who could understand technology. Apart from that, there are obstacles and other obstacles that until now have become a problem. The service officer as a respondent, mentioned. Barriers and constraints include: data shows that 33.3% of e-health service targets can be delivered correctly. The results of the study show that in the implementation of the e-health program there are obstacles and obstacles encountered by the implementor including, (1) the e-health website or application does not work as the implementor wants, causing duplicate data from several employee identities or data can be lost suddenly . Even the BPJS submission data can be lost when the website or application has an error so that the officer cannot follow up and needs to be re-submitted. Second, externally, namely, (2) the internet network used is not stable, and (3) lack of public awareness regarding service serial numbers that are not on schedule from the application.

In carrying out the e-health program, the Surabaya city government provides budgetary capacity, manpower or human resources, and infrastructure or facilities. This has an impact on the high rate of usefulness, effectiveness and efficiency of the e-health program in providing services which reaches 66.7%. However, suggestions in terms of coordination regarding the provision of complete infrastructure and care to support the e-health program need attention

Conclusion

The Patient Data Protection System in the Implementation of the E-Health Program in the City of Surabaya is reviewed from indicator (1). Patient Data Confidentiality Guarantee according to service recipient version that 67% or 116 respondents out of 175 respondents did not know for certain about patient data confidentiality guarantees; (2). E-Health Application Security that most of the respondents gave answers that they did not know as many as 125 respondents or 72% of the 175 respondents. This is because the respondents have never/know to use e-health services (3). Efforts to Convince Users in Using E-Health, it can be concluded that program implementers are trying to socialize the use of E-Health with complete information; (4). Security of E-Health Service Applications from Irresponsible Parties; (5). Patient Personal Data Guarantee program implementing version that the e-health program guarantees patient personal data according to applicable regulations.

ISSN 2721-0960 (Print), ISSN 2721-0847 (online)

References

Ariany, F., & Ningsih, M. (2020). Perlindungan Hukum Terhadap Identitas Pasien Covid 19. *Jurnal Sangkareang Mataram*, *6*(2), 61-64.

Prabowo, S. A., Rizky, M., & Mashuri, M. A. (2020). Implementasi E-Health Sebagai Alternatif Antrian Online di Puskesmas Kalirungkut Kota Surabaya. *Jurnal Syntax Transformation*, *1*(02), 66-73.

Putra, F. E. S., & Prabawati, I. (2019). Evaluasi Aplikasi e-Health di Puskesmas Jagir Kota Surabaya. *Publika*, *7*(8).

Ramadhani, E. (2015). Desain E-Health: Sistem Keamanan Aplikasi E-health Berbasis Cloud Computing Menggunakan Metode Single Sign On. In *Seminar Nasional Informatika Medis (SNIMed)* (pp. 50-57)

Rosadi, S. D. (2016). Implikasi Penerapan Program E-Health Dihubungkan Dengan Perlindungan Data Pribadi. *Arena Hukum*, *9*(3), 403-420.

Wierda, E., Eindhoven, D. C., Schalij, M. J., Borleffs, C. J. W., Amoroso, G., Van Veghel, D., ... & Ploem, M. C. (2018). Privacy of patient data in quality-of-care registries in cardiology and cardiothoracic surgery: the impact of the new general data protection regulation EU-law. *European Heart Journal-Quality of Care and Clinical Outcomes*, *4*(4), 239-245.

Zakariya, R. (2021). Langkah Penguatan Perlindungan Data Diri Pasien di Indonesia," *Heylaw.edu*.

ISSN 2721-0960 (Print), ISSN 2721-0847 (online)