

PENERAPAN *E-HEALTH* UNTUK MENGURANGI ANTREAN PANJANG PADA FASILITAS PELAYANAN KESEHATAN DI KOTA SURABAYA

E-Health Application To Reduce Long Queue At Health Service Facilities In Surabaya Cit

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ABSTRAK

Pemerintah Surabaya menciptakan sistem pendaftaran online atau e-health dengan harapan akan memberikan dampak positif pada penurunan volume antrean di loket pendaftaran. Tujuan untuk mengetahui seberapa besar keberhasilan sistem e-health untuk mengurangi jumlah antrean pada pusat pelayanan kesehatan di Surabaya. Metode: Studi ini merupakan literature review. Artikel diambil dari database Google Scholar yang dipublikasikan pada tahun 2017 hingga 2021. Hasil: Hasil tinjauan pustaka ini menunjukkan bahwa e-health dapat mempermudah proses pendaftaran pasien dan mengurangi waktu tunggu pasien untuk mendapatkan pelayanan. Indikator keberhasilan program e-health meliputi sistem yang baik, sistem informasi yang efektif, dan pelayanan prima bagi masyarakat. Kesimpulan: Penerapan e-health mampu mengurangi antrean panjang pada fasilitas pelayanan kesehatan di Surabaya. E-Health sebagai layanan publik memberikan informasi yang baik tidak hanya untuk pasien namun juga seluruh masyarakat Surabaya. E-health juga mampu mengetahui kebutuhan masyarakat dalam segi kesehatan.

Kata kunci: Antrean Panjang, E-health, Pelayanan kesehatan

ABSTRACT

Background : Surabaya Government has created an online registration system or e-health that is expected to give a positive impact on reducing the queue at the registration counter. Aims: To identify whether the online registration system or e-health which has been implemented by health service facilities in Surabaya is successful or not. Methods: This study was a literature review which collected articles from Google Scholar databases published from 2017 to 2021. Results: The review shows that e-health can simplify the process of patient registration and reduce patients' waiting time for health service delivery. The success indicators of e-health program include its well-established system, effective information system, and excellent service for community. Conclusion: E-health application can reduce long queue at Health Service Facilities in Surabaya. E-health as a public service gives good communication not only to patients but also community since it can be accessed in many areas in Surabaya. It can also identify the public needs as the users expect e-health developed.

Keywords: Long queue, E-health, Health services

Introduction

Nowadays the globalization makes some changes in the community in several sectors such as health, economic, and education. Changes that occur at the community then lead to the realization of improved government services with a better work system. The influence of globalization is colored by the rapid development of information technology that has led to a new revolution, namely the transition from conventional work systems to the digital. In government institutions, this changes is marked by the abandonment of traditional governance which is identical to paper-based administration towards electronic government (e-government). The development of e-government is one of the government's efforts to improve the quality of public services effectively and efficiently in various public sectors. One of them is the increasingly sophisticated technology which probes to fill the expectation of every job or any other needs. A company or organization also expects technology to give accurate information fast. For this reason, technology has an important role in the human life (Manurung, 2019).

In today's era, understanding the reasons beyond the user acceptance or rejection of technology has become one of the most important concerns in the information technology sector (Momani and Jamous, 2017). Technology acceptance is about how people accept technology for everything use. Acceptance can be further described as a critical factor in determining the success or failure of technology so that understanding technology acceptance is important (Samaradiwakara and Gunawardena, 2014).

The development of technology is there for a health sector, especially health

service facilities, such as primary healthcare centers and hospitals. Health service facilities have many problems. For instance, they have convoluted administration procedures, long queue traffic, inaccurate and incomplete patient data, and unclear information. (Avinda and Handoko, 2017). As a result, the local government needs to understand more about people's needs by giving the best services.

An increase in patient visits at Health Service Facilities in Surabaya either Primary Healthcare Center or Hospital cause long queue in the registration counter. A queue is the moment when people are waiting to get a treatment or service (Ginting and Rahardjo, 2014). Long queue makes patients wait for a long time and waste their time to get a registration number. Because of this, Surabaya Government created an online registration system in the primary healthcare centers. The frequency of use and the motivation to open the online registration information system have to do with the benefits of patients accessing the system. (Alferi, 2020) The online registration system can ease people to register medical check up.

Electronic Health or E-health is name of The online registration system. E-health is an information technology and communication service application which connecting and supporting sectors in health (Sambuaga, Rindengan and Sambul, 2017). Echange accessibility, efficiency, effectiveness, clinical quality process, and organizational business are the aims of E-health (Saharuddin, 2017). In the Regulation of Indonesian Ministry of Health No. 36 of 2009 about Health, service needs health information which can be accessed through an information system. E-health is one of the

alternatives to overcome long queue and increase efficiency of registering patients' referral letter. The Surabaya Health District Office along with the Population and Civil Registry Office collaborate to create e-health system that can be integrated with the registration system and patients' data in the primary healthcare centers of Surabaya (Setianto, 2016). The integrated e-health system can simplify the administrative process. Moreover, the Surabaya Health District Office partnered with the Communication and Informatics District Office to facilitate internet network for accelerating the use of E-health. E-health applications can be downloaded on Play Store, App Store, or www.ehealth.surabaya.go.id.

The Surabaya Government provides an e-health menu on *e-kios* provider which is available in every primary healthcare center of Surabaya (Agastya and Fanida, 2016). The e-health in Surabaya has been implemented at 63 primary healthcare center and two district government hospitals, including dr. M. Soewandhie District Public Hospital and Bhakti Dharma Husada District Public Hospital. The existence of the online registration system or e-health is expected to cut short waiting time for patient in the registration counter. For this reason, this literature review discussed only the implementation of e-health in primary healthcare centers at Surabaya.

Method

This study was a literature review discussing e-health. E-health is still a latest innovation in health sector, thus articles that discuss e-health are limited. Google Scholar was chosen as to collect articles from several journals. This study method is applied a qualitative approach by elaborating results descriptively. It utilized database from articles published from 2017 to 2021 on

Google Scholar. Keywords used was "e-health Surabaya" which is relevant to the topic of this study. This literature review analyzed how successful e-health for an online patient registration in the Health Service Facilities to reduce long queues at a registration counter and to advance the process of health services in primary healthcare centers.

Result and Discussion

Adian and Budiarto (2020) explained that at the beginning e-health was tested in ten primary healthcare centers of Surabaya. Those primary healthcare centers is located in Ketabang Kali, Rungkut, Jagir, Kali Kedinding, Kedurus, Manukan Kulon, Peneleh, Pucangsewu, Simomulyo, and Dupak must have the International Organization for Standardization or ISO. So that the primary healthcare centers references can be referred online to the dr. M. Soewandhie District Public Hospital and Bhakti Dharma Husada District Public Hospital. During the implementation of e-health, they often found some difficulties, such as the competence of human resources, organization's readiness, and organization's work culture. The supervision and evaluation of e-health were conducted over and over again to ensure that it works well. As the e-health runs properly, it has been implemented in 63 primary healthcare centers (100%). E-health as an internet-based service systems and applications not only eliminate long queues, but referrals for patients are faster. By e-health, the patient doesn't need to hassle bring all unnecessary files. They just need to bring their identity card. For the Health Service Facilities no longer need to ask the patient's name and identity because everything is connected through the management information. Table 1 explains the application of e-health at Health Service Facilities in Surabaya.

Table 1. E-health Application at Health Service Facilities in Surabaya

No.	Authors	Aims	Methods	Results
1	Farida Idayanti, 2021	To describe patients' satisfaction when experienced e-health system at Healthcare Center of Ketabang	Qualitative Approach	Patients are satisfied when experienced e-health system during online registration because it reduced long queues and waiting time.
2	Bagus Alderi, 2020	To describe the success of online registration system at RSI Surabaya	Qualitative Approach	The quality of information that patients can easily understand during the application of online registration system create some positive impacts.
3	Titik Mildawati, 2020	To describe e-health implementation and factors that influence its system at Healthcare Center of Pucang Sewu	Qualitative Approach	Implementation of e-health reduce long queues even though there are still patients that can not operate the system either on mobile or computer.
4	Wihda Maulani, 2020	To describe if e-health has reached the indicators of public service effectiveness in Surabaya	Qualitative Approach	E-health implementation has reached the indicators of public service effectiveness as the patients can understand the usage of simple system display.
5	Inka Mustika Sari, 2020	To describe the effectiveness of e-health application at dr. M. Soewandhie District Public Hospital	Qualitative Approach	Both doctors and patients can make appointment easily using e-health system
6	Dwi Jaliyanti, 2018	To describe the implementation of e-health in Peneleh	Qualitative Approach	E-health has an effectivity information system: 1. Equipped with data security features for recovery data.

		Primary Healthcare Center, Genteng Sub- District, Surabaya.		<ol style="list-style-type: none"> 2. Shortening queuing time to be 2 minutes. 3. Able to detect a disease as early as possible which may have potentials to outbreak. 4. Providing reports as an output which is required for a variety of administrative activities to Surabaya District Health Office. 5. Offering easy access to health services.
7	Nur Sa'idah Yusufadhiyah, 2018	To describe the implementation of e-health as a new public service in primary healthcare centers in all primary healthcare centers of Surabaya City.	Qualitative Approach	<p>E-health as a new public service:</p> <ol style="list-style-type: none"> 1. Accessible in many areas in Surabaya. 2. Slowly but surely, high adaptability of patients in using e- health. 3. Stand-by staffs needed to help patients in using e-health. 4. Conducting socialization of e-health repetitively to encourage patients obey the rules. 5. Staffs following the operational procedures of services to increase patients' attention in using e-health. 6. As much as 71.49% of Customer Satisfaction Index (CSI) meaning that the services can satisfy patients. 7. Easy access to health services, such as easy way for registration.
8	Darmawan, 2018	To describe how e-health suited patients' need	Qualitative Approach	E-health suited patients' need to reduce the number of queues

9	Avinda, 2017	To describe the effectiveness of e-health	Qualitative Approach	E-health application at at dr. M. Soewandhie District Public Hospital is good enough. This
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		application at dr. M. Soewandhie District Public Hospital		can be seen in the indicators of Satisfication, Adatability, and Life sustainability.
10	Dwi Putri Marshela, 2017	To describe the implementation of e-health service in Ngagel Rejo Primary Healthcare Center, Surabaya.	Qualitative Approach	<p>Key success of e-health:</p> <ol style="list-style-type: none"> 1. Has Top-Down Project (TDP) policy. 2. Involving experts of information and communication technology. 3. Conducting a training for all staffs. 4. Cooperation between Population and Civil Registry Office and Communication, Informatics Office and experts of information and communication technology in every primary healthcare center. 5. Conducting socialization of e-health use to patients. 6. Allocating funding from Surabaya District Government Budget. 7. Providing <i>e-kios</i> machine, a computer, and a printer to fasten services in primary healthcare centers. 8. Conducting socialization of e-health to community.

E-health as an Innovation for Registering Patients Online

In Table 1, the implementation of e-health was found in recent years. Before e-health was implemented, patient registration was noted manually. For example data and medical history were input to the management information system of primary healthcare centers offline. Afterwards, the management information system of primary healthcare centers is integrated with data from the Population and Civil Registry Office, including personal identity (ID) number, personal data, address, and family members in Surabaya. Local citizens of Surabaya can register on e-health by inputting their ID Number, and automatically all their details are in the system. Whereas, patients who are not from Surabaya can register themselves by inputting ID Number and personal data manually.

E-health innovates in several aspects, including the service process, service method, policy, and system (Hafizh, 2016). E-health improves service by updating its process from manual entry to automatic entry. For example, a queue number and medical referral letter registration now can be accessed online. Moreover, e-health is useful for shortening patients' waiting time. With e-health, patients do not need to come to a primary healthcare centers to get a queue number. Regarding its influence on policy, e-health reforms a new vision, mission, purpose, and strategy as it addresses the real problems of health services in primary healthcare centers. In addition, e-health becomes a bridging point between Surabaya Government as the initiator of e-health, Surabaya District Health Office, Population and Civil

Registry Office, and also Communication and Informatics Office. Innovation has some levels according to its impacts which may happen during its implementation (Hafizh, 2016). Innovation is a way to introduce new ideas, new product, new service, and new kind of beneficial procedures (Saharuddin, 2017). It aims to upgrade the quality of products, services, and procedures. E-health becomes an innovation for providing better infrastructures in supporting the organizational activity and process. The levels of innovation involve incremental, radical, and transformative innovation. First, an incremental innovation gives a small or rare impact on organization's service or structure. The second level is radical innovation as a basic innovation that needs political support, thus is rarely used. Meanwhile, transformative innovation brings a big change in organization's structure and takes a longer time to achieve the expected results. E-health in the primary healthcare centers is on the incremental level because it only gives a small impact. E-health only gives two impacts on the process of patient registration and medical referral letter registration which have been accessed online and integrated with management information system of primary healthcare centers for more accessible patient data and patients' medical history.

E-health is a solution to the problem of patient queue traffic on each workday in primary healthcare centers. During this time patients have to queue for a long time, before the start of working hours at the primary healthcare centers. Through e-health, patients no longer need to bother waiting in line too early at the primary healthcare centers. By e-health, patients

can register at a primary healthcare centers and can come for treatment according to the hours listed in queue numbers This is more efficient for who have limited access to health and its information (Hafizh, 2016). E-health uses a humanist approach. The e-

health application has three languages to communicate with patients who use text and audio services, namely Indonesian, Javanese, and Madurese. The choice of three languages is motivated not only because the population of Surabaya City is inhabited by Javanese and Madurese, but also to bring the e-health application closer to the population (Amah, 2016).

Innovation can be sustainable or discontinued (Hafizh, 2016). The e-health initiated by the Surabaya Government is categorized into a sustainable innovation, giving an on-going change in the current service of patient registration and medical referral letter registration. E-health can make this process done online with a computerized system.

The main output expected from the online patient registration according to patients' perspective is a decrease in queue traffic at the registration counter. Also, it may increase the speed of health services. From health workers' perspectives, e-health is expected to reduce workloads and retrieve computerized patient data so that health workers accomplish lighter and easier works.

E-health as a New Public Service

Many factors can affect program success. Research shows that leadership quality and effective communication play an important role in project success (Fayaz, Kamal and Amin, 2017). eHealth is an innovation that is a health information

system developed and developed by the Surabaya City Government aimed at improving public health services. (Sari, 2020) Public service which exists as a new paradigm emphasizes the government's role to serve people pervasively (Yusfadhiyah, 2018). Public service is the basic service which can apply, implement, and also serve the community (Khotimah, Muchsin and Pindahanto, 2019). The given service is expected to satisfy the community. A new public service prioritizes not only citizens but also customers, seeks for public needs, values community welfare over bussiness profits, as well as find strategies and fairness. E-health as a new public service applies to all levels of society. E-health for health services in primary healthcare centers counts as a means of speeding up queuing process and predicting disease patterns through observation on frequently accessed health services (Jaliyanti, 2018). The identified disease pattern informs the description of diseases in a region, thus it contributes to more effective disease prevention program. In the long term, it will give an impact on reducing the amount of morbidity in a certain region.

E-health as a public service gives good communication not only to customers but also community since it can be accessed in many areas in Surabaya. It can also identify the public needs as the users expect e-health developed (Yusfadhiyah, 2016). In addition, e-health prioritizes community welfare over bussiness profits as it is expected to assist people with difficulties of accessing e-health. Implementing e-health in health facilitites acquires the government to find strategies and project the right target, for example conducting socialization about e-health to patients.

The accountability of e-health is not simple, thus e-health serves rather than steers. In addition, it values not only people but also productivity (Yusfadhiyah, 2018). In this case, the government plays a role to serve community needs rather than control them in using e-health. E-health becomes an alternative to enhance productivity by giving easy access to health service and building an independent community.

Above all, staffs in primary healthcare centers should be ready to assist patients when facing troubles in e-health. Human factor becomes the most determining factor in succeeding the implementation of a new public service (Yusfadhiyah, 2018). The implementation of e-health is also monitored and evaluated to give a better service and to improve staff's work performance. Along with this way, the primary healthcare centers

conduct training for their staffs to easily understand the use of e-health.

As previously explained, e-health is also used for online medical referral letter registration. The online system of medical referral letter registration has been connected to the health guarantor, for instance Social Security Agency for Health and hospital partners. Patients who have no health guarantor still uses manual medical referral letter registration. Because of e-health, people are expected to be more independent in utilizing technology and understanding its needs.

Conclusion

E-health application can reduce long queues at Health Service Facilities in Surabaya. E-health as a public service gives good communication not only to customers but also community since it can be accessed

in many areas in Surabaya. It can also identify the public needs as the users expect e-health developed.

Conflict of Interest

The author states that there is no conflict of interest for this article.

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