

Research Article

Development of Technology and Health Information Resource System in Supporting Achievement of UHC in Health Services of South Buru Regency

Landy Solissa^{1*}, Muhammad Alwi Arifin¹, Muh. Asdar² and Amran Razak¹

¹Department of Administration and Health Policy, Faculty of Public Health, Hasanuddin University, Indonesia

²Department of Management, Faculty of Economics and Business, Hasanuddin University, Indonesia

*Corresponding Author

Landy Solissa

Abstract: Technology facilities and health information system resources in the South Buru Regency Health Service have not been managed and developed efficiently due to the lack of supporting information infrastructure and the lack of supporting resources in managing the health information system. The purpose of this study was to determine the development of technology and health information system resources in supporting the achievement of Universal Health Coverage (UHC) in the South Buru Regency Health Office. This type of research is qualitative with a case study approach. The location of this research is the South Buru Health Service. Informants in this study are the heads of the Health Office, employees of the Office of Health Services, Information and Public Relations, and employees of the health information system/operator of the health information system, related fields, service provider operators, and the community. The research data collection techniques used in-depth interviews, document review and observation. The data obtained were analyzed using content analysis. The results showed that information system development facilities and technology and resource development in the South Buru Regency Health Service were still not well fulfilled, especially in remote areas of South Buru Regency. It is hoped that regional governments will pay more attention in developing health information systems in South Buru Regency.

Keywords: Technology Facilities, Resources, SIK, UHC, Health Office.

INTRODUCTION

One of the core elements in universal health coverage is an efficient and well-managed health system in improving health information services to the community, this has also become an important issue raised by WHO in formulating global health development by determining 6 building blocks as the basis for health development in globally. One of the 6 building blocks is the development of a health information system that must be fulfilled by a country (WHO, 2005).

The degree of health will be well developed and in line with the development of the health system, one of which is the health information system with the existence of a health information system, the public and also health workers will get accurate and accurate information that can be accounted for so that it can be used as a basis for decision making (Hunink *et al.*, 2014). At present the health information system is still hampered and has not been able to provide accurate data and information, so the health information system

is still not an effective management tool for health development (Agustina *et al.*, 2018).

The rapid development of Information and Communication Technology provides convenience in strengthening and developing health information systems. This was responded by the Indonesian government by developing data and information services for the community based on the Decree of the Minister of Health of the Republic of Indonesia No. 837 of 2007 concerning the Development of a National Computer Information System Online Computer Network.

Based on this decision, several indicators of achievement are planned each year, namely: the implementation of an integrated data communication network between 80% of Regency / city health offices, and 100% of provincial health offices and the Ministry of Health; implementation of an integrated online data communication network between 90% of Regency / city health offices, 100% of provincial health offices, 100%

Quick Response Code



Journal homepage:

<http://www.easpublisher.com/easiehl/>

Article History

Received: 13.10.2019

Accepted: 26.10.2019

Published: 04.11.2019

Copyright @ 2019: This is an open-access article distributed under the terms of the Creative Commons Attribution license which permits unrestricted use, distribution, and reproduction in any medium for non commercial use (NonCommercial, or CC-BY-NC) provided the original author and source are credited.

of central hospitals, 100% of Central Technical Implementation Units with the Ministry of Health; the implementation of an integrated online data communication network between all regency/city health offices, provincial health offices, hospitals and central UPT with the Ministry of Health. Of these, the government seeks to develop a health information system in accordance with its uniqueness and characteristics, namely the development of a regional health information system through software or a website.

Based on the Regulation of the Minister of Health of the Republic of Indonesia Number 97 Year 2015 Concerning the Health Information System Road Map of 2015-2019, the Health Information System Road Map is used as a reference for the Government, Regional Governments, and other stakeholders in efforts to develop and strengthen the national health information system in next five years in order to realize an ideal health information system. This was then applied in the Maluku Province Regional Regulation No. 2 of 2014 concerning the Regional Health System in Article 22, which then became the legal basis for the management and development of the health information system in the Maluku province.

At the time of initial data collection, interviews were conducted with staff in the Program, Information and Public Relations Division in charge of the health information sector of the South Buru Regency, the lack of supporting facilities for health information systems, the lack of use of supporting technology and human resources in running health information systems. Where the health information system is one of the supports for Universal Health Coverage (UHC) achievement. The South Buru Regency Health Office only functions as a provider of data that has been determined by the provincial department. While in the process of supervision, management, the budget is all run by the Maluku Provincial Health Office. Therefore, researchers want to know the development of technology facilities and health information system resources in supporting the achievement of UHC in the South Buru Regency Health Office.

METHODOLOGY

RESULTS

Characteristics of Informants

Table1. Characteristics of Informants Based on Gender, Age, and Position.

Initials	Gender	Age / years	Position	Description
HNS	F	56	Service Secretary	Key Informant
HML	F	42	Head of Program, Information and Public Relations	Key Informant
MLS	F	50	Secretary of Program, Information and Public Relations	Key Informant
MZ	M	35	Staff / Operators	Ordinary Informant
AL	M	36	Staff / Operators	Ordinary Informant
ES	F	28	Staff	Ordinary Informant
DNH	F	26	Staff	Ordinary Informant
PD	M	36	Staff	Ordinary Informant
AK	M	40	Staff	Ordinary Informant
MS	F	32	Staff	Ordinary Informant

Source: Primary Data, 2019

Research Design

This type of research is a qualitative case study approach, because researchers want to know about the development of technology facilities and resources supporting health information systems in an effort to achieve Universal Health Coverage (UHC) in the Department of Health in South Buru Regency. The focus of this research is on the role and experience of informants in the implementation of health information systems. This research was conducted at the South Buru Regency Health Office in Maluku Province in August-September 2019.

RESEARCH INFORMANT

The informants in this study were determined by the principle of suitability and adequacy. The technique of taking informants in this study is purposive sampling technique. Key informants are the heads of the Department of Health, the regular informants in this study consisted of employees of the Office of Health, Information and Public Relations, as well as employees of the health information system / operator in the Health Information System field. Additional informants in this study are related fields, service provider operators, and the community. The total informants in this study were 10 including 3 key informants and 7 regular informants including inclusion criteria, namely informants / staff who knew information, policies and policy makers in the Health Office, were willing to become informants voluntarily, employees / staff had become state civil apparatus and served more than 1 year.

DATA COLLECTION

Data collection is done by extracting data from various techniques and sources to clarify information in the field. The data obtained are primary data. This primary data was obtained by indepth interview, observation and document review.

DATA ANALYSIS

Data obtained from interviews with informants were then analyzed using the content analysis method. Content analysis is a technique used to analyze and understand the contents of information.

Table 2. Characteristics of Key Informants (In-depth Interviews)

Initials	Gender	Age / years	Education	Position
HNS	F	56	Magister	Service Secretary
HML	F	42	Magister	Head of Program, Information and Public Relations
MLS	F	50	Bachelor degree	Program, Information and Public Relations Secretary

Source: Primary Data, 2019

Table3. Characteristics of Ordinary Informants

Initials	Gender	Age / years	Education	Position
MZ	M	35	Bachelor degree	Staff / Operators
AL	M	36	Magister	Staff / Operators
ES	F	28	Bachelor degree	Staff
DNH	F	26	Bachelor degree	Staff
PD	M	36	Bachelor degree	Staff
AK	M	40	Bachelor degree	Staff
MS	F	32	Bachelor degree	Staff

Source: Primary Data, 2019

Informant characteristics are categorized into 3 groups namely Informant Characteristics Based on Gender, Age, and Position, Key Informant Characteristics (In-depth Interview), and Characteristics of Ordinary Informants from the South Buru Regency Health Office. This research wants to see the development of technology facilities and health information system resources in supporting the achievement of UHC in the South Buru Regency Health Office. Development of technology facilities and Health information system resources available at the South Buru Regency Health Office.

Health Information System Development Facilities

Basically, Information Systems require facilities and the development of Information Systems itself and each region in Indonesia certainly requires facilities for the development of Health Information Systems in their respective regions. That also applies to the South Buru Regency Health Office where facilities for the Information System are needed not only for the Health Office but for the Puskesmas especially specifically to provide good health services to the community.

Based on the results of interviews with key informants and informants it is commonly obtained information that, there are a lot of shortcomings in the Regency of South Buru in terms of fulfilling facilities for the development of health information systems especially for remote areas, there are 10 out of 12 health centers that do not have internet networks, there is no control Room information system, lack of human resources in the field of information and technology so that the management of information and data communication between the Office of Health and Puskesmas is not running optimally.

Technology and Resource Development

Technology Development and researched resources include, the development process, the technology used, the use of the online system, the reporting process, the supporting resources available at the South Buru Regency Health Office. The information you want to know from the Department of Health is the process of developing information technology in the fulfillment of health information for the South Buru community. Based on the results of interviews conducted with informants in the development of information technology, the results obtained, that the development of technology in the implementation of the Health Information System has not been running optimally at the South Buru Regency Health Office, but there are several strategies undertaken to overcome these problems, namely by the existence of several applications during This is used, where with the application the reporting of data and health information can be well inputted and provided to the people of South Buru Regency.

Use of Online Systems and Health Data Reporting

The information you want to know is whether the use of a health information system in the South Buru Regency Health Office is already online and how the Health data reporting system is in the Health Office. Based on the results of interviews with key informants, it was found that, for the use of an online system and reporting of health data it had indeed been attempted and also the use of strategies in the use of health information systems properly had been carried out with all the deficiencies that existed in the South Buru Regency Health Office.

From interviews with regular informants, the results show that the use of online information systems is not optimal yet, but for health data reporting, several applications have been provided by the Maluku Provincial Health Office and the Indonesian Ministry of Health.

DISCUSSION

The results showed that there were still many shortcomings in the South Buru Regency Health Office in terms of fulfilling facilities for the development of the health information system, especially for remote areas, so that information management and data communication between the Health Office and puskesmas were not running optimally. Attention is needed from the Regional Government of South Buru Regency to give more attention to the fulfillment of the Health Information System in South Buru Regency.

Research Raja *et al.*, (2015) conducted at a health service facility in Pontianak, concluded that support for health development efforts in order to reach all levels of society requires a media that can inform the public about the location of the nearest health service facility and show route recommendations towards the health service facility. The same thing was revealed from research conducted by Kastanti *et al.*, (2015) explained that the Regency Health Office can fill, change, view and delete Puskesmas data in its area, where it can be done efficiently with the information support facilities.

The results of a study conducted by Isnawati (2016) in the Peat Public Health Center of Banjar Regency, namely regarding the implementation of the regional health information system, stated that in implementing the Regional Health Information System (SIKDA) application and Advocacy with the local government of the Regency of Banjar, it is expected that there will be an internet network installation directly to the puskesmas, as well as making local regulations regarding everything about online reporting.

Expansion of universal health coverage or UHC based on the National Social Security System Law No. 40 of 2004 states that coverage of services to all populations is a mandatory program for all Indonesian people, where the development of health information systems that can maximally support the achievement of population health service coverage. This was also expressed in WHO, in formulating global health development in 2005. In this study it was found that the health department of the Regency of South Buru had not been able to provide adequate health information facilities and also the lack of cross-sectoral cooperation with the regional government of South Buru in the preparation of the program. Priority in providing good information services for the people of South Buru Regency.

Based on the results of research, in the development of technology and implementation of the Health Information System has not been running optimally at the South Buru Regency Health Office.

As for some of the strategies undertaken to be able to overcome these problems, namely by the presence of several applications that have been used so far, where with these applications the reporting of data and health information can be well inputted and given to the people of South Buru Regency.

Decree of the Minister of Health of the Republic of Indonesia No. 837 of 2007 concerning the Development of an Online Computer Network for National Health Information System is planned for several indicators each year, namely: The implementation of an integrated data communication network between 80% of Regency/city health offices and 100% of provincial health offices with the Ministry of Health. The implementation of an integrated online data communication network between 90% of Regency/city health offices, 100% of provincial health offices, 100% of central hospitals, 100% of Central Technical Implementation Units with the Ministry of Health. The implementation of an integrated online data communication network between all regency/city health offices, provincial health offices, central hospitals, and the Central UPT with the Ministry of Health.

According to the International Health policy program, WHO (2005) the fulfillment of good technology and resources in implementing a health information system can also improve information in meeting universal health coverage or UHC. Where based on the principle of efficient and good management of the health system to meet priorities in community-centered, by providing good health information and the provision of health information services in support of the achievement of UHC as a whole. Based on research conducted by Jenie (2016) conducting research in health centers. By making electronic services (e-service) will certainly provide positive benefits for public bodies. Public bodies can easily carry out services to various desired areas by utilizing the existing internet network.

Based on the results of in-depth interviews, field observations, and document reviews, information was obtained that for the use of an online system and reporting of health data it had indeed been attempted, but the implementation was not optimal due to the absence of a control room in the management of health information systems, lack of supporting information facilities, lack of human resources in the field of information and technology so that the use of online systems has not been able to run properly, data communication between puskesmas and dinas is not running optimally.

Based on the Decree of the Minister of Health of the Republic of Indonesia Number 511 of 2002 concerning Policies and Strategies for the Development of the National Health Information

System (SIKNAS) and Number 932 of 2002 concerning guidelines for implementing the development of regional health information systems in regency or city, various strategies are developed, one of which is the development of data and information services for management and decision making and the development of data and information services for the community. Prasetyo (2017) research conducted at Sumber treasury Health Center, states that the website-based health information system that has been made can be accessed on various devices, both computer devices in general (such as PCs / laptops) or mobile devices (smartphones).

The research of Nazir & Darmawati (2018) was carried out in the Bukittinggi puskesmas regarding the Design of Integrated Health Record-Based Recording and Reporting for e-Report to Improve Public Health where the aim was to create an e-report that described accurate, representative and reliable information that could be used as a guideline in the preparation of health planning society. Research Methods In this study using the waterfall method which helps in system design ranging from design, testing to implementation while to model the system design using UML (Unified Modeling Language).

Currently the use of online information systems has been widely applied in various Health Offices and Health Centers nationally, this proves the commitment of the Regional Government in providing maximum health information systems to the public. As revealed in a study conducted by Putro & Riasti (2012) at the Rembang Regency Health Office, which presents a health insurance service information system as a medium of service for patients who receive health insurance in the web-based regency health office in Rembang. Sinaga *et al.*, (2015) stated that efforts to implement information systems in puskesmas are very important in supporting patient transaction data in decision making.

CONCLUSION

Information system development facilities and technology and resource development in the South Buru Regency health service are still not well fulfilled, especially in remote areas. It is hoped that the regional government will pay more attention in developing the health information system in South Buru Regency.

REFERENCES

1. Agustina, R., Dartanto, T., Sitompul, R., Susiloretni, K. A., Achadi, E. L., Taher, A., & Thabrany, H. (2018). Universal health coverage in Indonesia: *concept, progress, and challenges*. *The Lancet*.
2. Hunink, M. M., Weinstein, M. C., Wittenberg, E., Drummond, M. F., Pliskin, J. S., Wong, J. B., & Glasziou, P. P. (2014). *Decision making in health and medicine: integrating evidence and values*. Cambridge University Press.
3. Isnawati, K. (2016). Implementasi Aplikasi Sistem Informasi Kesehatan Daerah (SIKDA) Generik Di UPT. Puskesmas Gambut Kabupaten Banjar. *Journal of Information Systems for Public Health*, 1(1), 64-71.
4. Jenie, S. (2016). Sistem Informasi Pelayanan Puskesmas Berbasis Web. *Indonesian Journal on Software Engineering*, 2(1), 44-49.
5. Kastanti, H. L., Satoto, K. I., & Widiyanto, E. D. (2015). Sistem Informasi Evaluasi Pelayanan Publik Puskesmas Berbasis Website pada Kementerian Pendayagunaan Aparatur Negara dan Reformasi Birokrasi. *Jurnal Teknologi Dan Sistem Komputer*, 3(1), 103-109.
6. Nazir, N., & Darmawati, G. (2018). Perancangan Pencatatan Dan Pelaporan Terpadu Puskesmas Berbasis E-Report Untuk Meningkatkan Kesehatan Masyarakat. *Sains Dan Teknologi Sttind Padang*, 18(2), 23-29.
7. Prasetyo, E. (2017). Sistem Informasi Angka Kesehatan Masyarakat Pada Puskesmas Sumberharta Berbasis Web Mobile. *Jutim (Jurnal Teknik Informatika Musirawas)*, 2(2), 122-127.
8. Putro, P. E., & Riasti, B. K. (2012). Pembangunan Sistem Informasi Jaminan Kesehatan Rembang Sehat Berbasis Web Pada Dinas Kesehatan Kabupaten Rembang. *Speed-Sentra Penelitian Engineering dan Edukasi*, 3(4).
9. Raja, H. M., Putra, A. B., & Irwansyah, A. (2015). Rancang Bangun Sistem Informasi Geografis Berbasis Web Fasilitas Pelayanan Kesehatan Di Kota Pontianak. *Jurnal Edukasi dan Penelitian Informatika (JEPIN)*, 1(2), 64-71.
10. Sinaga, E. R., & Haryanto, H. (2016). Evaluasi Penerapan Sistem Informasi Puskesmas di Kabupaten Sleman. *Journal of Information Systems for Public Health*, 1(2), 44-51.
11. WHO. (2005). The 58th World Health Assembly Of 2005 Regarding Sustainable Financing, Universal Health Coverage, And Social Health Insurance. World Health Organization, Geneva, Switzerland.