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Factors Relating to the Success of the Health Information System at the Buton District Health Center

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ABSTRACT

Introduction: Program planning that has been carried out so far has not been carried out according to procedures due to inadequate human resources; organizing; Cooperation and Coordination; strengthening of data sources; management of data on utilization and development of resources, operation of the Electronic Health System; development of Health Information System; weak monitoring and evaluation; and there is no coaching and supervision. The purpose of the study was to determine the factors related to the success of the health information system at the health center in the Buton district.

Method: This type of research is quantitative using a cross-sectional study design. This research has been carried out from January to February 2022. The population is all officers who are considered to have a role and responsibility for health services in the Buton district. with a total of 579 health workers in the Buton district who work at the Health Center, with a sample of 90 respondents using the Simple Random Sampling technique.

Result: Study found that there was a relationship between planning, organizing, cooperation, and coordination factors, strengthening data sources, data management, resource utilization and development, electronic system operation, monitoring, and evaluation of the Health Information System at the Buton District Health Center.

Conclusion: It is suggested the importance of monitoring and evaluating the readiness of the Health Center in implementing a more optimal Health Information System based on the completeness of the infrastructure, adding human resources according to the field.

Introduction

Indonesian government regulation 46 of 2014 concerning health information systems, it is stated that a health information system is a set of arrangements that include data, information, indicators, procedures, devices, technology, human resources that are interrelated and managed in an integrated manner to direct action or decisions that are useful in supporting health development.[1]

In Indonesia, most of the implementation of e-health in Indonesia is related to the use of m-health and telemedicine. The use of health services to the public in Indonesia through cellular phones using voice, SMS (Short Message Service), and data access. With these two services, health service information can be distributed. Optimizing the use of ICT can be realized through collaboration with the government, namely between the Ministry of Health and the Ministry of Education as providers of health information sources including patient medical record data holders, and the Ministry of Communication and Information Technology which coordinates the telecommunications infrastructure and information technology that will be used.[2]

The Health Information System is one of the six "building blocks" or main components of the health system in a country. The six components (building blocks) of the health system, namely service delivery (implementation of health services), medical products, vaccines, and technologies (medical products, vaccines, and health technology), health workforce (medical personnel), health system financing (systems health financing), health information system (Health Information System), leadership and governance (leadership and government).[3]

Problems that are still often found in the implementation of SIK today are that efficiency has not been realized, marked by: 1) the existence of "redundant" data, 2) duplication of activities, 3) low data quality, 4) the presence of data that is not by the needs, 5) report timeliness, 6) feedback system is not optimal, 7) low utilization of data/information at the local level for advocacy, program planning, monitoring, and management, and 8) inefficient use of resources. The conditions mentioned above are caused by: 1) "overlapping" conditions in data collection and processing, 2) data and information management that has not been integrated and coordinated properly.[4]

Currently, in Indonesia there are 3 (three) models of SIK management, namely: a). Manual SIK management, where information management in health care facilities is carried out manually or paper-based through the process of recording in register books, cards, and special forms, starting from the registration process to making reports. This is due to limited infrastructure, funds, and the location where the health services are located. Manual management, apart from being inefficient, also hinders the management decision-making process and the reporting process. b. Offline computerized SIK management, in this type of information management in health services, most/wholly has been done using computer devices, either by using a Management Information System (SIM) application or with ordinary electronic office applications, but it is still not supported by an online internet network. to the district/city and provincial health offices/national health data bank. c. Online computerized health information system management, in this type of information management in health services, most/wholly has been carried out using computer equipment, using the Management Information System application and has been connected online via the internet network to the district/city and provincial health offices/health data banks. national level to facilitate communication and data synchronization.[5]

One aspect that affects the performance of the City or District Health Office as mentioned above is the aspect of health management, where the City or District Health Office has the task of managing data and information obtained from health centers, hospitals, and other health services facilities. In connection with this, the City or District Health Office requires good health information system management so that government policy decisions can be more precise according to the needs of the region.[6]

Information on health efforts where the healthy paradigm has an orientation where efforts to improve public health are focused on: 1. Health promotion, increasing the vitality of the population who is not sick (85%) to be more resistant to disease through exercise, fitness, and vitamins. 2. Disease prevention through immunization for pregnant women, infants, and children. 3. Prevention of countermeasures, environmental pollution, and protection of society against bad

influences (through behavior change). 4. Provide treatment for the sick population, (15%) through medical services.[7,8]

The health research information system aims to see the development of policy results and also the novelty of various problems in the field, it is known that the majority of health agencies take information from student research outputs in higher education as indicators in decision making in their area, but in principle research and development, institutions have a function that which provides information on research results obtained to be submitted for improvement of problems that exist in the local area through local government policies themselves.[9]

The health financing information system in Indonesia, in this case, the financing of both hospital equipment, health care services, and also the national health insurance which is structured and sustainable in all health services, including patient medical records, costs and referral management, all of which can be claimed. as a financing effort for health workers and other health services.[10]

Special Allocation Fund reports in the health sector are submitted by the Regional Head to the Minister, of Health, Minister of Finance, and Minister of Home Affairs regularly (quarterly as well as annual reports). Meanwhile, the realization of budget use data is reported through a different mechanism, namely Physical Special Allocation Fund using the Online Monitoring System for the State Treasury and Budget System and Non-Physical Special Allocation Fund using the e-Renggar application. In 2020, the realization of the 2020 Physical Special Allocation Fund nationally was 57.6% with the highest realization being DKI Jakarta Province (100%) and the lowest being West Papua Province (7.1%), such as Southeast Sulawesi province in 17th place with 67% achievement.[11]

As a result of the above conditions, the data generated from each region is not uniform, some are incomplete and there are the same variable data in the information system of one health program that is different from that in the information system of other health programs. Then the validity and accuracy of the data are doubtful, especially if data verification is not carried out. Coupled with the slow delivery of data, both to the Health Office and the Ministry of Health, the information received is no longer up to date and the processing and analysis of data are hampered. In the end, decision-makers/stakeholders make decisions and health policies are not based on accurate data, thus resulting in slow decision-making

It is known that the achievement of the target of using the National Health Information System is 80%, and the province of Southeast Sulawesi as a whole only covers 67% and the achievement of users of the health information system for the Buton district is 57%. the use of a health information system so that it has an impact on the slow decision making to follow up on health problems that exist in the working area of the 4) the presence of data that is not by the needs, 5) report timeliness.

The state of the information system in Buton Regency is considered still not running effectively because there are still several Health Centers that use manual information systems so there are reports that are not uniform and have an impact on the slowness of reporting to the provincial level. periodically both from its human resources and reporting tools according to Article 27 of PP No. 46 of 2014 it is known that the program planning that has been carried out so far has not been carried out according to procedures due to inadequate human resources; organizing; Cooperation and Coordination; strengthening of data sources; management of data on utilization and development of resources, operation of the Electronic Health System; development of Health Information System; weak monitoring and evaluation; and there is no guidance and supervision, in all health information systems in the Buton district due to human resources and scientific fields that are not by the person in charge of the program and the lack of training activities for programmer officers in reporting online computerized-based health information systems, which are considered quite easy, fast and easy. controlled.

By the initial survey the researchers conducted in Buton district in 4 (four) health centers, it was known that there was 1 (one) health center using a Health Information System with an online-based computerized model and there were 2 using an offline computerized-based SIK and 1 (one) health center using a manual SIK, namely by making a report in the form of a registration book and format. This phenomenon is caused by the lack of infrastructure and has an impact on the slow

reporting and slow decision-making process. Departing from this problem, the researcher is interested in conducting research with the title Factors related to the success of the Health Information System at the Buton Regency Health Center.

Method

This type of research is quantitative using a cross-sectional study design. This research has been carried out from January to February 2022. This research was carried out at the Buton District Health Center. The population is all officers who are considered to have a role and responsibility for health services in the Buton district. with a total of 579 health workers in Buton district who work at the Health Centers, with a sample of 90 respondents using the Simple Random Sampling technique.[12,13]

Result

The results of this study can be described in tabular form for each research variable

1. **The relationship between program planning and the success of the Health Information System at the Buton District Health Center**

Planning	Health Information System Success				Σ	%	*Chi-Square*	ϕ	X tabel
	Enough		Not Enough						
	f	%	f	%					
Enough	16	61,54	10	38,46	26	100	16,803	0,459	3,841
Not Enough	10	15,63	54	84,38	64	100			
Total	26	29	64	71	90	100			

It is known from the results of the Chisquare test and obtained the X Count value of 16.803 and Phi value of 0.454 which means it has a moderate relationship between the planning factors of the Health Information System program and the Implementation of the Health Information System.

2. **Organizational relationship with the success of the Health Information System at the Buton District Health Center**

Organizing	Health Information System Success				Σ	%	*Chi-Square*	ϕ	X tabel
	Enough		Not Enough						
	f	%	f	%					
Enough	21	67,74	10	32,26	31	100	31,923	0,621	3,841
Not Enough	5	8,47	54	91,53	59	100			
Total	26	29	64	71	90	100			

The results of the Chi-Square test obtained the value of X Count 31.923 and the value of Phi 0.621 which means it has a strong relationship between Organizing Factors and the implementation of Health Information Systems.

Cooperation and Coordination Relationship with the success of the Health Information System at the Buton District Health Center

Cooperation &Coordinationizing	Health Information System Success				Σ	%	*Chi-Square*	ϕ	X tabel
	Enough		Not Enough						
	f	%	f	%					
Enough	18	75,00	6	25,00	24	100	30,881	0,613	3,841
Not Enough	8	12,12	58	87,88	66	100			
Total	26	29	64	71	90	100			

Phi 0.613 which means it has a strong relationship between Cooperation and Coordination Factors in the implementation of Health Information Systems.

3. The Relationship between Strengthening Data Sources and the success of the Health Information System at the Buton District Health Center

Strengthening Data Sources	Health Information System Success				Σ	%	*Chi-Square*	ϕ	X tabel
	Enough		Not Enough						
	f	%	f	%					
Enough	19	59,38	13	40,63	32	100	20,221	0,500	3,841
Not Enough	7	12,07	51	87,93	58	100			
Total	26	29	64	71	90	100			

The results of the Chisquare test obtained the value of X Count 20.221 and a Phi value of 0.500 which means it has a moderate relationship between the strengthening of data sources and the implementation of health information systems.

4. Relationship between Data Management and the success of the Health Information System at the Buton District Health Center

Data Management	Health Information System Success				Σ	%	*Chi-Square*	ϕ	X tabel
	Enough		Not Enough						
	f	%	f	%					
Enough	19	67,86	9	32,14	28	100	27,354	0,578	3,841
Not Enough	7	11,29	55	88,71	62	100			
Total	26	29	64	71	90	100			

The results of the Chi-Square test obtained the value of X Count 27,354> from 3,841 or X table and the value of Phi 0.578 which means it has a moderate relationship.

5. The relationship between the utilization and development of resources with the success of the Health Information System at the Buton District Health Center

Utilization and Development of Resources	Health Information System Success				Σ	%	*Chi-Square*	ϕ	X tabel
	Enough		Not Enough						
	f	%	f	%					
Enough	17	53,13	15	46,88	32	100	12,426	0,397	3,841
Not Enough	9	15,52	49	84,48	58	100			
Total	26	29	64	71	90	100			

It is known from the Chi-square test results and obtained the value of X Count 12.426 and Phi value of 0.397 which means it has a low relationship between the factors of utilization and development of resources with Health Information System Implementation.

6. The relationship between the operation of the Health Electronic System and the success of the Health Information System at the Buton District Health Center

Health Electronic System Operation	Health Information System Success				Σ	%	*Chi-Square*	ϕ	X tabel
	Enough		Not Enough						
	f	%	f	%					
Enough	18	66,67	9	33,33	27	100	24,233	0,546	3,841
Not Enough	8	12,70	55	87,30	63	100			
Total	26	29	64	71	90	100			

The results of the Chisquare test obtained the value of X Count 24,233 and the value of Phi 0.546 which means it has a moderate relationship between the operating factors of the Health Electronic System and the implementation of the Health Information System.

7. Relationship of Health Information System Development with the success of Health Information System in Buton District Health Center

Information System Development	Health Information System Success				Σ	%	*Chi-Square*	ϕ	X tabel
	Enough		Not Enough						
	f	%	f	%					
Enough	20	71,43	8	28,57	28	100	0,872	0,132	3,841
Not Enough	6	9,68	56	90,32	62	100			
Total	26	29	64	71	90	100			

The results of the Chisquare test obtained the value of X Count 0.872 and the value of Phi 0.132 which means that there is no relationship between Health Information System Development Factors and Health Information System implementation.

8. The relationship between monitoring and evaluation with the success of the Health Information System at the Buton District Health Center

Monitoring And Evaluation	Health Information System Success				Σ	%	*Chi-Square*	ϕ	X tabel
	Enough		Not Enough						
	f	%	f	%					
Enough	17	54,84	14	45,16	31	100	13,634	0,415	3,841
Not Enough	9	15,25	50	84,75	59	100			
Total	26	29	64	71	90	100			

The results of the Chi-square test obtained the value of X Count 13,634 and the value of Phi 0.413 which means it has a moderate relationship between the factors. The relationship between monitoring and evaluation with HealthInformation System Implementation.

9. Relationship between Guidance and Supervision with the success of the Health Information System at the Buton District Health Center

Guidance and Supervision	Health Information System Success				Σ	%	*Chi-Square*	ϕ	X tabel
	Enough		Not Enough						
	f	%	f	%					
Enough	20	68,97	9	31,03	29	100	0,530	0,110	3,841
Not Enough	6	9,84	55	90,16	61	100			
Total	26	29	64	71	90	100			

The results of the Chi-Square test obtained the value of X Count 0.530 > from 3.841 or X table and the Phi value of 0.110 which means there is no relationship.

Discussion

The relationship between program planning and the success of the Health Information System at the Buton District Health Center

It is known from the Chi-square test results and obtained that the X Count value of 16.803 has a moderate relationship between the planning factors of the Health Information System program and the Implementation of the Health Information System. The development of Health Information Systems plays an important role in the shift from paper-based processing and storage to computer-based processing, as well as improving data on health services, besides that not only for patient care and administrative purposes but also for health care planning and clinical research and epidemiology.[14]Information system strategic planning aims to align the information system activity plan with the organization's strategic plan and to overcome the risks that arise in its implementation related to organizational changes, policy changes, position changes, effective control tools/parameters are needed in controlling the performance and successful implementation of information technology.[15]

This research is in line with Sumarni's (2015) research. With the title Analysis of Health Information System Planning Needs in the Service Sector of the Boyolali District Health Office, it can be concluded that planning greatly affects the success of information systems in general, and his research explains that officers in the health service sector expect the same basic data between fields, so that the data can be valid.[16] And also an integrated health information system that can accommodate program needs at the Boyolali District Health Office.[17]

The Buton District Health Center as a whole is generally stated to use the Electronic Health

Information System, but its implementation is constrained by the completeness of supporting facilities such as the internet network and human resources so that the data input process is considered to have a delay for each month. all areas are filled with this is the basic reason for the need to improve internet network infrastructure and then provide an electronic Health Information System with specifications that meet reporting needs.

Of the 90 respondents, it can be explained that the planning factor for the Sufficient Health Information System program is 26 respondents, but in the Success of the Health Information System with the Enough category there are 16 respondents (61.54%) and less are 10 (38.46%), and those who state the planning factor Health Information System program There are less than 64 respondents and in the Success of Health Information System in the Enough category there are 10 (15.63%) and the planning factor for the Health Information System program is less than the Success of Health Information System is less, amounting to 54 respondents (84.38%).

In this study, it is explained that the planning factor of the SIK program is still a component that needs to be improved even though according to the results of the study it is known to have a moderate relationship because other factors can also be influenced by human resources and infrastructure, both organizations and individuals.

Organizational relationship with the success of the Health Information System at the Buton District Health Center

The results of the Chi-square test and obtained the value of X Count 31,923 have a strong relationship between the Organizing Factors and the implementation of the Health Information System. The use of health information is carried out to obtain direct or indirect benefits as knowledge to support the management, implementation, and development of health development and the information obtained must be sourced from accurate information which is carried out for policymaking, planning, organizing, mobilizing, monitoring, controlling and evaluating health development.[18]

Organizing is the process of identifying, grouping, organizing, and building a model of people's work relationships to achieve organizational goals related to the success of Health Information Systems, in this study is in line with research by Candra Mukti Erryandari and Erwin Santosa in 2012 where the concept of improving performance in the success of SIK in terms of In its implementation there are still many obstacles, such as lack of human resources, inefficient socialization process, not yet working of the committee according to the main tasks and functions and not yet routinely reporting quality indicators to the board of directors, as well as the absence of follow-up from the audit director who has not been able to complete the application of SIK properly.[19]

The Health Information System is very helpful in the decision-making process for (a) the implementation of daily health services, (b) rapid intervention in overcoming health problems, and (c) supporting health management in the district/city, provincial and central levels, especially in the preparation of short term, medium-term and long term plans. A good SIK is an information system that can produce accurate and timely data/information.

Organizing is a step towards identifying, classifying, and organizing various visible activities, In organizations, preparation of organizational structure is very important so that everyone in the organization knows their duties or responsibilities, duties, rights, and authorities appropriately. The purpose of organizing is so that the division of labor can be carried out with full responsibility. The division of tasks is expected to improve the skills of each member of the organization (specialization) in managing assigned tasks which have benefits in assisting coordination, facilitating supervision, taking advantage of the benefits of specialization, saving costs, and increasing harmonious relations within the scope of work.[20]

From the distribution of research results from 90 respondents, it was explained that the operating factor of the Health Electronic System was Sufficient by 27 respondents but in the Success of the Health Information System with the Enough category, 18 respondents (66.67%) and less were 9 (33.33%). the operation of the Health Electronic System is less than 63 respondents and the Success of the Health Information System in the Enough category is 8 (12.70%) and the Organizational Factor is less with the Success of the Health Information System less than 55 respondents (87.30%). Another factor is that the use of electronic information systems can take longer if there are no trained personnel in their use.

The organizational system in applying SIK at the Buton district health center has been running but has a weakness where human resources with

scientific fields that specialize in applying medical records are not appropriate, this also affects the delay in the activity reporting system.

The organization is a general part of management where human resource management is also the management and use of existing individual resources (employees). Its management is developed and used optimally in the world of work for the achievement of organizational goals and the personal growth of officers.[21]

Organizing in Strategic decision making is characterized by a large amount of uncertainty and is future-oriented. These decisions establish long-term plans that will affect the entire organization. In short, it can be said that the strategy decided is related to long-term planning and includes setting goals, determining policies, organizing, and achieving the success of the organization as a whole. A different level of decision-making requires different types of information in the information system to meet the needs differently because the information that will be generated depends on these needs.[22]

Cooperation and Coordination Relationship with the success of the Health Information System at the Buton District Health Center

The results of the Chi-square test and obtained the value of X Count 30,881 have a strong relationship between the Cooperation and Coordination Factors with the implementation of the Health Information System, coordination and cooperation are both very important aspects in carrying out SIK performance, there is a difference between the two. When managing a project, this is usually not an individual effort instead, it is a collective effort where many individuals are connected to the SIK program through various aspects.

Research in line with Nigraheni's 2015 research concluded that the Health Information System provides convenience in collecting information about health problems and developments in a practical and fast way. On the other hand, there are also weaknesses in operating an electronic Health Information System because it requires high costs, so the network and security system used must be strong and secure. Thus the Cooperation and Coordination Factor plays a very important role in improving the quality of Health Information System services.[23]

Technical factors are oriented to software problems (format, content, system), hardware (type of computer, completeness of the unit, processing speed), and supporting facilities of the electronic Health Information System application. Data Management factors refer to the internal and external environment, organizational culture, policies, and organizational support that support the implementation of an Electronic Health Information System.[24]

The coordination emphasizes negotiating with others While working together is an effort to achieve a common goal. Cooperation is not only a positive feature but is also a mandatory feature if the organization at the Health Centers wants to implement well. Collaborating with others refers to the act of working with all team members or health workers who hold the program within the scope of the Health Centers.[25]

The form of cooperation at the Buton district health center is considered to have been implemented but the workflow is not yet clear under the framework of each individual in the organization because understanding and skills have different views in the implementation this is due to lack of coordination in addition to the lack of human resources factors thus the system Reporting is considered to be delayed due to a lack of cooperation and coordination between health workers in the scope of work of the Buton District Health Center.

The results of the tabulation of research data with 90 respondents can be explained that the Cooperation and Coordination Factor is Sufficient from 24 respondents but in the Success of the Health Information System with the Enough category there are 18 (75.00) and less totaling 6 respondents (25.00%) and stating the Cooperation and Coordination Factor There are less than 66 respondents and in the Health Information System Success in the Enough category there are 8 respondents (12.12%) and the Cooperation and Coordination Factor is lacking with the Health Information System Success being less than 58 (87.88%).

Thus there is a strong influence between the variables of cooperation and coordination with the success in the health center in the Buton Regency area, this is due to the cooperation and coordination of all activities and the interpretation of the results of activities both individual performance in managing work activity programs can affect organizational performance.

The Relationship between Strengthening Data Sources and the success of the Health Information System at the Buton District Health Center

The results of the Chi-square test and obtained the value of X Count 20.221 has a moderate relationship between the strengthening of data sources and the implementation of health information systems. Strengthening of data sources in the success of SIK requires the development of policies and standards to be implemented to realize an integrated health information system.

The health information system component consists of the following: 1. Manual Data Source, 2. Computerized Data Source, 3. Health Service Information System, 4. Stakeholder Information System, 5. National Health Data Bank (Data Warehouse), 6. Data Use by the Ministry of Health, 7. Use of Data by Stakeholders and Society.[26]

Meanwhile, the components that make up the regional health information system consist of a. Sources of data, both manual and electronic b. Data exchange datasets (aggregate and/or individual), c. Data Bank, containing individual and/or aggregate databases, d. Information system for recording and reporting (computerized or manual), e. Information (with web media, softcopy, hardcopy), f. Connections between systems and/or subsystems, g. Users (internal and/or external).[27]

Implementation of data integration is done by sending data from source to destination. The mechanism for sending data from the data source to the destination information system is very dependent on the type of information system and the type of connectivity between the systems themselves.[28]

The Health Center level in the application of health information system with the strengthening of data sources is influenced by the management of computer networks at the Health Centers level so that in its implementation the following objectives can be achieved: 1) Availability of computer infrastructure and LAN networks in the internal Health Centers that are connected to the internet network. 2) The maintenance of the LAN network infrastructure in the internal Health Centers and its connection to the internet network. 3) Optimizing the utilization of LAN network infrastructure in the internal Health Centers. 4) Optimizing the use of the internet network in the internal Health Centers.[29]

The data sources that must be used in the health information system are Policies/Regulations/ (Planning RPP health information system, Master Plan for Health Information Technology, SIK Road Map, Guidelines/Juknis/SOP), Standardization (Data (Health Center dataset, System (metadata, codification, data exchange protocol) Resources (Education and training – Functional positions – Funding – IT Infrastructure) Governance (ISO-27001 ISMS implementation, IT audit).[8]

From the tabulation of research data, 90 respondents explained that the factor of Strengthening Data Sources is Sufficient from 32 respondents but in the Success of the Health Information System with the Sufficient category there are 19 (59.38) and less than 13 respondents (40.63%) and those who state the Factors of Strengthening Data Sources Less than 58 respondents and in the Success of Health Information Systems in the Enough category there are 7 respondents (12.07%) and the factor of Strengthening Data Sources is lacking with the Success of Health Information Systems being less than 51 (87.93%).

Buton district health centers have currently implemented strengthening of data sources, seen from the reports produced but are still in manual form and are currently trying to upgrade to an internet-based electronic stage in the hope of being more effective and efficient and faster access.

Relationship between Data Management and the success of the Health Information System at the Buton District Health Center

The results of the Chi-square test and obtained the value of X Count 27,354 have a moderate relationship, it is known that the health information system is a system for managing data and health information at all levels of government in a systematic and integrated manner to support health managementto improve health services to the community.

Data management is all kinds of data management or combinations of various kinds of data management to make the data useful for the desired results that can be used immediately. Data management is the manipulation of data into a more meaningful form. Data management is all kinds of data management or combinations of various kinds of data management to make the data useful for the desired results can be used immediately. A fast step up in data processing systems is the level of electronic data processing (Electronic Data Processing).[30]

The data management in question is a process where data input from various health programs and program achievements within the

scope of the Puskesmas is reported in a structured manner to the district and provincial levels to the ministry of health, but at theHealth Centers level, it is responsible for reporting district or city health services.

Currently, in Indonesia, there are 3 (three) health information system management models, namely: a. Manual health information system management, where information management in health care facilities is carried out manually or paper-based through the process of recording in register books, cards, special forms, starting from the registration process to making reports. This is due to limited infrastructure, funds, and the location where the health services are located. Manual management, apart from being inefficient, also hinders the management decision-making process and the reporting process. b. Offline computerized health information system management, in this type of information management in health services, most/wholly has been done using computer devices, either by using a Management Information System (SIM) application or with ordinary electronic office applications, but it is still not supported by an online internet network. to the district/city and provincial health offices/national health data bank. c. Online computerized health information system management, in this type of information management in health services, most/wholly has been carried out using computer equipment, using the Management Information System application and has been connected online via the internet network to the district/city and provincial health offices/health data banks. national level to facilitate communication and data synchronization.[29]

In Buton Regency, on average, all Health Centers are led by the head of the Health Centers with a scientific background in the field of Health Policy administration, but some have a background as practitioners in the health sector, but in principle, to achieve the mission of implementing a Health Information System, good coordination is needed between organizational leaders and subordinates thus there is a synergy and harmony in its implementation.

From the research tabulation data, it is explained that the Data Management factor is Sufficient from 28 respondents but in the Success of the Health Information System with the Enough category, there are 19 (67.86) and less than 9 respondents.[14]Who state the Data Management Factor are less than 62 respondents and The success of the Health Information System in the Enough category amounted to 7 respondents (11.29%) and the lack of Data Management factors with the Success of the Health Information System was less amounted to 55 (88.71%).

The state of the information system in Buton Regency is considered still not running effectively because there are still several health Centers that use manual information systems so there are reports that are not uniform and have an impact on the slowness of reporting to the provincial level. periodically both from its human resources and reporting tools according to Article 27 of PP No. 46 of 2014 it is known that the program planning that has been carried out so far has not been carried out according to procedures due to inadequate human resources; Data management in which the Electronic Health System operates; development of Health Information System; weak monitoring and evaluation; and there is no guidance and supervision, in all health information systems in the Buton district due to human resources and scientific fields that are not by the person in charge of the program and the lack of training activities for programmer officers in reporting online computerized-based health information systems, which are considered quite easy and fast and controlled.

The relationship between the utilization and development of resources with the success of the Health Information System at the Buton District Health Center

It is known from the results of the Chi-square test and obtained that the value of X Count 12,426 has a weak relationship between the factors of utilization and development of resources with the Implementation of Health Information Systems. In principle, with superior employees, the expectations of the community and the institution hope that everything that is done by its employees is perfect. Can do tasks in a short time, complete a lot, and in an efficient way.

Empowering Human Resources or Empowering Resources is a very important, key, and strategic aspect of management because Human Resources must be able to play a role in translating resources to other resources in a management order that is the goal of the Organization.[31]

As it is known that the source of the resources (resources) that exist in management, the presence of HR in management is indeed very strategic and even is the key to the success of management in the context of carrying out various

activities to achieve the goals as a set. This is understandable because after all the availability and completeness of other resources can only be useful if these resources are empowered by appropriate and reliable Human Resources. Therefore, efforts to achieve organizational goals may become inefficient and ineffective because the resources in Human Resources do not show and do not describe as expected.[32,33]

Human resources in the organization are in the form of power or strength that exists in humans themselves who are not able to empower other sources (Non-Human Resources) so that they do not provide benefits/results in an organization. In this regard, the purpose of HR Empowerment is the realization of human resources who have/have conducive competence, clear and trustworthy authority, and accountable accountability in the context of implementing the organization's mission.[34]

This research is in line with the 2012 Vita Puspita which explains that the indicators of HR research are measured by indicators, namely: (1) the level of formal education he has, (2) the technical training he has attended, (3) the ability to master the job. Skills are measured by the following indicators: (1) technical work instructions, (2) thoroughness in completing work, with the results of the study it is known that there is a significant relationship with the implementation of the Health Information System, where it is concluded that the quality of Health Information System services is formed because of appropriate human resources. their field and understand in detail the Health Information System.

One of the functions of human resource management is training and development, meaning that to provide good and appropriate health workers, training and development are required. This is an effort to prepare health workers for work tasks that are not their expertise. The workforce needs to be properly trained to work. This theory is very suitable to avoid the worst possibilities of ability and responsibility at work, so that in completing work tasks more effectively and efficiently by predetermined rules.

Thus, HR greatly influences the achievement of programs in an agency, where the responsible parties can at least understand specifically the program objectives that are in line with the regional vision and mission of both the central government and regional governments. In general, public health centers in Buton Regency.

Thus the Head of the Health Centers isthe leader of the need for the implementation of a Health Information System by the minimum service standards of the Health Information System that has been established so that it can be measured both the level of need and the level of effectiveness of existing services related to the implementation of the Health Information System.

The relationship between the operation of the Health Electronic System and the success of the Health Information System at the Buton District Health Center

The results of the Chi-square test and the obtained value of X Count 24,233 have a moderate relationship between the operating factors of the Health Electronic System and the implementation of the Health Information System, it is known that the objectives of the implementation of electronic-based health information technology in the health sector can: (1) improve quality, accessibility, and sustainable health and speed of work processes, especially in health care facilities; (2) optimizing data flow to increase the availability of quality health data and information.[35]

The application of ICT in the health sector has become a demand for health organizations/institutions not only in the government sector but also in the private sector in carrying out their service operations to be more efficient. Several e-health implementation initiatives, namely (1) to support individual health services (electronic systems for recording and reporting hospitals, health centers, and other health care facilities, as well as telemedicine), (2) public health services (electronic systems for disease surveillance), health crisis management), and (3) health administration support services (electronic systems for human resource management, logistics of medicines and health supplies and health insurance).

In Indonesia, the implementation of e-health is still limited to certain health coverage areas and sub-systems. The national e-health strategy is implemented through a framework for planning, development, implementation, and evaluation, which includes components (1) governance and leadership (governance and leadership). leadership); (2) strategy and investment (strategy and investment); (3) services and applications (services and applications); (4) standards and interoperability (standards and interoperability); (5) infrastructure (infrastructure); (6) regulations, policies, and compliance with policies (legislation,

policy, and compliance); and (7) human resources (workforce).

The problem in implementing SIK is that it is not integrated with all aspects of health information, including humans, management, tools, and technology, especially computers. The Health Information System enables the obtaining of health information for patients, doctors, Heads of Health Centers, and other Decision-Making Officials quickly and easily according to their respective provisions and interests.

The operation of the electronic system is not yet familiar in the Southeast Sulawesi province, especially in the Buton district where there are too many different systems at all levels of administration (district or city, province, and central), resulting in duplication of data, incomplete, invalid and incorrect data. not connect with the center. Data flow gaps (fragmented, multiple bottlenecks, and untimely).

This research is in line with the results of research by the Ministry of Health in NTB which proves that: Puskesmas must send more than 300 reports and there are 8 kinds of software so that the administrative burden and the burden on the officers are too high. It is considered ineffective and inefficient. The recording and reporting formats are still different and not yet standardized nationally. Another problem is that the available resources still do not meet, both in terms of the equipment needed and human resources who must be more competent in mastering information technology.

Of the 90 respondents, it is known that the operating factor of the Health Electronic System is Sufficient from 27 respondents but in the Success of the Health Information System with the Sufficient category there are 18 respondents (66.67%) and fewer are 9 (33.33%) and those who state the Operational Factor of the Health Electronic System There are less than 63 respondents and in the Health Information System Success in the Enough category there are 8 (12.70%) and less Organizing Factors with the Health Information System Success are less than 55 respondents (87.30%), in principle that superior human resources and according to the field scientific knowledge makes it easier to apply health information systems. Because considering the benefits of health information systemtostreamline time in its use.

Relationship of Health Information System Development with the success of Health Information System in Buton District Health Center

The results of the Chi-square test obtained the value of X Count 0.872. There is no relationship between Health Information System Development Factors and Health Information System implementation. It is known that infrastructure facilities have been procured as needed in implementing health information system in every district in Indonesia, but there are still reports that are late and still not effective, this is due to inadequate human resources and internet networks that do not match the needs of the infrastructure provided.

In principle, in the development of a Health Information System, a commitment to each health service infrastructure unit must be built so that each health information system runs well and more importantly uses computer technology in implementing a Computer Based Information System.

Health Center is the closest base to the community. Where is the first solution when they experience problems in terms of their health? The process that occurs is still being recorded in a special form to record daily transaction data at the health centers. The difficulties that arise and are felt by some health centers officers are in recapitulating periodic reports that must be immediately reported to the health office because daily operational data must be reopened and re-examined by telephone consultations regarding patients, names, dates, content, including actions taken even though infrastructure readiness already exists with this the need for guidance for managers to get used to reporting using health information system.

Research in line with Nigraheni's 2015 study concluded that the electronic medical record information system makes it easy to record information about patients in a practical and fast way. On the other hand, there are also weaknesses in operating an electronic Health Information System because it requires high costs, so the network and security system used must be strong and secure.[23]

Other technical factors are oriented to software problems (format, content, system), hardware (type of computer, completeness of the unit, processing speed), and supporting facilities of the electronic Health Information System application which the manager still does not

understand more carefully. Other factors are Data Management which leads to the internal, and external environment, organizational culture, policies and organizational support that supports the implementation of an Electronic Health Information System.[24]

From the data analysis, it is explained that the Development of Health Information Systems is Sufficient from 28 respondents but in the Success of Health Information Systems with the Enough category there are 20 (71.43%) and fewer, there are 8 respondents (28.57%) and those who state that the Health Information System Development Factors are Less of 62 respondents and in the Health Information System Success in the Enough category there are 6 respondents (9.68%) and the Health Information System Development Factor is less with the Health Information System Success is less totaling 56 (90.32%).

Thus, there is a need for a deeper understanding of the health information system for officers so that they can take advantage of the infrastructure development of the SIK, which changes every year in the reporting system, and the need for the government to adapt by increasing the internet network for isolated areas.

The relationship between monitoring and evaluation with the success of the Health Information System at the Buton District Health Center

The results of the Chi-square test and obtained the value of X Count 13,634 have a moderate relationship between the relationship between monitoring and evaluation factors with Health Information System Implementation. monitoring is an ongoing activity, carried out at the management functional level, evaluation is a periodic activity, carried out at the program level in the implementation of health information system in health centers.

An information system Is a combination of tools and procedures used to manage the information cycle (from data collection to providing information feedback) to support the implementation of appropriate actions in planning, implementing, and monitoring health system performance.[36]

Monitoring and evaluation is a very powerful public policy management instrument to help decision-makers and implementers see the progress and impact of a program or policy. To determine the effectiveness of the health information system Program in utilization efforts related to efficiency and benefits.

Monitoring and Evaluation is a process of determining the value or magnitude of success in achieving predetermined goals. This process includes the steps of formulating goals, identifying appropriate criteria that will be used to measure success, determining the magnitude of success, and recommendations for further program activities. certain standards to find out if there is a difference between the two and how the benefits that have been carried out compared with the expectations to be obtained.[37]

The evaluation consists of two types, namely formative evaluation, and summative evaluation: 1) Formative evaluation is an evaluation carried out at the program implementation stage intending to change or improve the program. This evaluation is carried out to improve ongoing programs and is based on daily activities, weeks, months, and even years, or a relatively short time. The benefits of formative evaluation are mainly to provide feedback to program managers about the results achieved and the obstacles faced. Formative evaluation is often referred to as process evaluation or monitoring. 2) Summative evaluation, is an evaluation carried out to see the overall results of a program that has been completed. This evaluation is carried out at the end of the activity or some period after the program, to assess the success of the program.[25]

From the table above, it can be explained that the relationship between monitoring and evaluation factors is sufficient from 31 respondents but in the Health Information System Success with the Enough category there are 17 (54.84%) and fewer are 14 respondents (45.16%) and those who state the Relationship Factor monitoring, and evaluation Less than 59 respondents and in the Health Information System Success in the Enough category there are 9 respondents (15.25%) and the relationship between monitoring and evaluation factors is less with the Health Information System Success is less than 50 (84.75%).

Thus, monitoring and evaluation greatly affect the achievement of programs in an agency, where the responsible parties can at least understand specifically the program objectives that are in line with the regional vision and mission of both the central government and regional governments. In general, puskesmas in Buton Regency

Relationship between Guidance and Supervision with the success of the Health Information System at the Buton District Health Center

The results of the Chi-square test and the X Count value of 0.530 have no relationship. Guidance and supervision that is intended, namely on the implementation of regional government is a process of activities so that regional government runs effectively and efficiently by the plans and provisions of laws and regulations.

In this study, there is no relationship between coaching and supervision, this is because supervision and guidance have been implemented, but in general, the form of request for a reports and guidance is related to an appeal in the use of internet-based health information system applications, but it is known that the existing obstacle is the internet network, not all health centers can access, as a result of a weak network. Or the need to provide additional BTS (Base Transceiver Station). BTS is a telecommunications infrastructure that facilitates wireless communication between communication devices and network operators.[38,39]

Supervision is a process to ensure that all activities carried out are in what was previously planned. It is undeniable that each leadership function is closely related to one another. This will be clearer if we remember that in fact, the five functions of leadership are planning, and organizing.[37]

According to Sholeh and Rochmansjah 2010, to ensure smooth implementation and ensure the orderly administration of regional property management efficiently and effectively, the following functions are needed: 1. Coaching, namely business or activity through the provision of guidelines, guidance, training, and supervision. 2. Supervision, namely efforts or activities to find out and assess the actual reality regarding the implementation of tasks and or activities compared to the applicable laws and regulations. 3. Control, which is an effort or activity to ensure and direct that the work carried out goes according to a predetermined plan.

From the table above, it can be explained that the relationship between monitoring and evaluation factors is sufficient from 31 respondents but in the Health Information System Success with the Enough category there are 17 (54.84%) and fewer are 14 respondents (45.16%) and those who state the Relationship Factor monitoring, and evaluation Less than 59 respondents and in the Health Information System Success in the Enough category there are 9 respondents (15.25%) and the relationship between monitoring and evaluation factors is less with the Health Information System Success is less than 50 (84.75%).

In general, public health centers in the Buton district work area have a history of reporting that seems slow, even though there are adequate health information system facilities and even guidance and supervision, but the network system is also a major factor in the delay in the report so there is a need for coordination and cooperation between the Buton district health service government and the private sector. others in improving the quality of health information system services.

Conclusion

The results of the study found that there was a relationship between planning, organizing, cooperation and coordination factors, strengthening data sources, data management, resource utilization, and development, electronic system operation, and monitoring and evaluation of the Health Information System at the Buton District Health Center. And there is no relationship between the Information System Development factor and the guidance and supervision of the Health Information System at the Buton District Health Center. It is suggested the importance of monitoring and evaluating both the readiness of the health centers in implementing a more optimal Health Information System based on the completeness of the infrastructure, adding human resources according to the field.

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