
Evaluation of the Early Warning, Alert and Response System (EWARS) at the Public Health Centers in Working Area of Paniai Regency Health Department, Papua Province

Rosalina Yogi^a, Hasmi^{b*}, Agus Zainuri^c, Yacob Ruru^d

^aPostgraduate Master Program of Public Health, Faculty of Public Health, Cenderawasih University

^{b,c}Faculty of Public Health, Cenderawasih University, Jayapura Papua, Indonesia, 99351

^dDepartment of Statistics, Faculty of Mathematics and Natural Sciences, Cenderawasih University

^aEmail: rosalinayg123@gmail.com; ^bEmail: hasmiuncen20@gmail.com;

^cEmail: azainuri_fkm@yahoo.com; ^dEmail: yacobruru@yahoo.com

Abstract

Background: The Early Warning, Alert and Response System (EWARS) is a system used to respond quickly by providing early warning in the form of a signal for increased disease characteristics. Public Health Centers are obliged to collect complete and timely EWARS data on a weekly basis to facilitate early detection of disease incidents, but the facts in the EWARS reporting field do not follow indicators.

Research Objectives: Evaluating the implementing of the Early Warning, Alert and Response System (EWARS) at the Public Health Centers in the working area of the Paniai Regency Health Office. **Research method:** Qualitative research using a case study approach was the research method used in this study. This study was conducted from June 25 to July 18, 2020 at five Public Health Centers in the work area of the Paniai Regency Health Department. A total of 11 (eleven) informants were taken using a purposive sampling method. In-depth interviews and participatory observation are the main methods of data collection. The data were qualitatively analyzed.

* Corresponding author.

Results: Input component: lack of human resources, both in terms of quality and quantity, existence of multiple tasks, accumulation of manpower in urban areas, lack of facilities and infrastructure to support the implementation of EWARS. Process component: there was no EWARS data processing, no feedback and monitoring and evaluation by the EWARS Health Office Manager. In the Output Component: the delivery of the report by officers is not timely and incomplete.

Keywords: Evaluation; Surveillance; EWARS; Paniai Regency.

1. Introduction

Disease surveillance is a key capacity for strategies to improve early detection of outbreaks that have been developed in various countries under the International Health Regulations (IHR) 2005 [1]. Reducing the workload of health workers and increasing the sensitivity of surveillance can be achieved by increasing the automation of disease reports in low-resource settings [2]. However, the implementation of automated surveillance must be accompanied by an evaluation to assess whether or not the system meets its objectives [3]. Indonesia is a member of the United Nations (UN) Organization, which always supports the policies of these organizations if they are not in conflict with national or international policies. A country must develop, strengthen and maintain the capacity to detect, assess and report incidents as soon as possible [4]. The geographical condition of Indonesia is very difficult to locate, so there is a very high potential for environmental diseases to occur. This threatens the health status of the people of Indonesia and may even spread to other neighboring countries. The Ministry of Health has developed a Health Information System to achieve Indonesia's health development objectives. The health information system can facilitate the decision-making and implementation of health programs. Indonesia must develop, strengthen and maintain the capacity to detect, assess and report incidents as soon as possible [5]. The Early Warning, Alert and Response System (EWARS) has been developed since 2007 by the Ministry of Health of the Republic of Indonesia, as exemplified by the World Health Organization (WHO), which is designed to respond to the needs of Indonesia with the aim of taking action or responding quickly to potential emergency situations (KLB, short for Kejadian Luar Biasa in Indonesia) This system works by monitoring the progress of the disease at any time and will provide early warnings in the form of a signal (alert) if there is an increase in cases of illness that exceed the threshold according to the predetermined indicators [5]. Paniai Regency is one of the regencies of Papua Province, Indonesia. Paniai Regency was established on the basis of Law No. 52 of 1996. It consists of 24 districts, 5 sub-districts and 216 villages with a surface area of 20,686,54 km² and a population of 170,193 (2019). The Paniai region code is 9108. It is located in the interior at an altitude of 1,700 meters above sea level and at an average temperature of 24.60 degrees Celsius. The northern part of Paniai Regency borders Intan Jaya Regency, the eastern part borders Puncak Jaya Regency, the southern part borders Deiyai Regency and the western part borders Nabire Regency [6]. Paniai Regency has 30 Public Health Centers (Puskesmas, short for Pusat Kesehatan Masyarakat in Indonesian), 18 of which already have a Puskesmas Identification Number, 18 Puskesmas and 12 others do not have a Puskesmas Identification Number, only an Operational Permit from the Paniai Regency Health Office. On the basis of data collected in 2019, there were 5 doctors in Puskesmas, 281 nurses, 3 analysts, 30 public health graduates, 3 environmental health workers, 4 nutrition workers and 68 midwives, 2 pharmacists and the rest general workers [7]. The submission of aggregate report data at Puskesmas

level, at regency, and provincial level is made every Monday morning [5]. The weekly report that is reported in the weekly format (W2) will affect the accuracy and completeness of the report and it will be easy to detect diseases that are likely to cause outbreaks because the higher the accuracy of the report, the faster the early warning (alert) for outbreaks is detected [5]. The national indicator for the completeness of weekly reports at Puskesmas level is 90 per cent and the weekly accuracy is 80 per cent. Provinces that met the indicators of completeness of W2 report data in January and February 2020 (week 20) at Puskesmas are Gorontalo, Riau and South Sumatra Provinces with 100%, followed by Yogyakarta Province with 98%, Jambi and Bengkulu with 97%, Sumatra Province West and West Nusa Tenggara with 96% and Bangka Belitung Province with 95%. West Nusa Tenggara 93 per cent, Lampung Province and Bengkulu Province 92 per cent, North Sulawesi Province and DKI Jakarta Province 90 per cent and West Java Province, Central Java Province, Southern Kalimantan Province, Bali Province, Aceh Province and Central Sulawesi Province 80%. Based on the EWARS surveillance report (2020) on the accuracy and completeness of the data, EWARS Papua is one of the provinces that implements the Early Warning, Alert and Response System (EWARS) as an effort to detect potential outbreaks of disease, but the results of the EWARS output in the form of completeness and accuracy of the reports in Papua are still very minimal. Based on the Puskesmas-based EWARS (2020), it was reported that week 1 to week 10 in the Papua Province in 2020 the accuracy of the Puskesmas reports was 29 per cent below the target indicator for 80 per cent accuracy of the reports and 31 per cent completeness of the Puskesmas reports, which is still below the completeness of the report indicator target of 90% [8]. Paniai Regency is one of the regencies of Papua that has implemented the EWARS system. According to the Paniai Regency Health Office (monitoring manager), this was recorded from the first week to the 10th week of 2020. The reports reported from the Puskesmas to the Papua Province have an accuracy of only 4 per cent compared to an indicator target of 80 per cent for the accuracy of the Puskesmas reports. Meanwhile, the completeness of the Puskesmas reports reported to Papua Province is 7 per cent below the target of 90 per cent. According to the surveillance manager of Paniai Regency (2020), of the 30 Puskesmas reported on time and completely according to the indicator, only the Enarotali Puskesmas was 100% while 29 Puskesmas in Paniai Regency did not report [8]. Paniai Regency faces the problem of having very remote areas with transportation facilities and infrastructure that are very difficult to reach by the limited cell phones and internet networks and few and limited health personnel. Areas that are classified as very remote and difficult to reach are Akoubaida, Duma-Dama, Nawipauwo, Youtadi, Yabomaida, Bogobaida, Komopa Bayabiru and Siriwo. For moderate or ordinary areas which are relatively not remote areas with moderate health workers and transportation that is not so difficult, consisting of Pasir Putih, Tuguwai, Kebo I, Kebo II, Panibagata, Yagai, Deyatei, Okeitadi, Kegouda, Muiyetai, Dimia, Uwebutu, Epouto and Keniapa. The city areas that are located in the city are Enarotali, Kogekotu and Bibida. Based on the results of preliminary studies and interviews with the person in charge of the Surveillance at the Paniai Regency Health Office (her name is Yatipai), it is known that the number of Puskesmas consists of 18 main Puskesmas and 12 branch Puskesmas, each of which carries out the same duties as a Puskesmas. There are Puskesmas which are the object of choice for the author's research, namely from 30 health centers, namely 5 health centers and in the Health Office. This is because in the initial survey of research at the Paniai Regency Health Office, from 30 Puskesmas there were several that could represent the Puskesmas, namely the western Puskesmas, namely the Obano Puskesmas, the Puskesmas in the east namely Bibida Puskesmas and Enarotali Puskesmas, a Puskesmas in the northern region namely the Pasir Putih Puskesmas and Puskesmas the southern part is the Epouto Health

Center. All of these Puskesmas have almost the same problems, namely in recording and reporting, they are often late in reporting, the data in the Puskesmas are incomplete. Based on the background of the problems above, it turns out that there are problems in the implementation of EWARS in Paniai Regency, thus the author wants to know about “The Evaluation of the Implementation of the Early Warning, Alert and Response System (EWARS) in Paniai Regency.”

2. Materials and Methods

2.1. Type of Research

The research method used in this study was a qualitative research with a case study approach. This study was conducted from June, 25 to July, 18, 2020 in five Public Health Centers (Puskesmas) in the working area of health department, Paniai Regency, Papua Province. A total of 8 (eight) informants were taken using a method of purposive sampling.

2.2. Ethical Research and Data Collection

The main data collection methods are in-depth interviews and participatory observation. The interview guide was semi-structured, open, and probing. Interviews were recorded and transcribed verbatim. Written consent was given to all of the participants. Confidentiality and anonymity are ensured. Data were analyzed qualitatively.

3. Result and Discussion

3.1. The Characteristics of Informants

Table 1: The characteristics of informants based on education and position

No	Initial Informant	Education	Position
1.	Informan 1	Bachelor's degree (S1) in Nursing	Head of the Obano Public Health Center (Puskesmas)
2	Informan 2	Master's degree (S2) in Biomedical Pharmacology	Head of the Enarotali Public Health Center (Puskesmas)
3	Informan 3	Bachelor's degree (S1) in Public Health	Head of the Pasput Public Health Center (Puskesmas)
4	Informan 4	Diploma Three's degree (D3) in Nursing	Head of the Epouto Public Health Center (Puskesmas)
5	Informan 5	Diploma Three's degree (D3) in Nursing	Head of the Bibida Public Health Center (Puskesmas)
6	Informan 6	Diploma Three's degree (D3) in Nursing	Person in charge for EWARS at Enarotali Public Health Center (Puskesmas)
7	Informan 7	Diploma Three (D3) in Nursing	Person in charge for EWARS at Pasir Putih Public Health Center (Puskesmas)
8	Informan 8	Diploma Three's degree (D3) in Nursing	The manager of EWARS at the Paniai Regency Health Departmet

An overview of the characteristics of informants in this study can be found in Table 1:

(Source: Primary Data, 2020)

Table 1 shows the number of informants, namely 5 Head of Public Health Center (Puskesmas), 3 person in charge of EWARS at the Puskesmas and 1 person in charge of EWARS Program at the Paniai Regency Health Department.

3.2. The Input Component of EWARS

3.2.1. Human Resources

Human resources are the main input to the implementation of the Early Warning, Alert and Response System (EWARS) in Puskesmas, which aims to ensure that the workforce is ready, capable, alert, active and trained to perform organizational tasks. Adequate human resources (HR) are needed for the management of the system, both in terms of quality and quantity. This is guided by minimum requirements for human resource planning. Based on the results of human resources interviews on the implementation of the Early Warning, Alert and Response System (EWARS) as shown in the interview results as follows:

“There are no EWARS officers.” (Informants 1, 4 and 5)

“There are EWARS Puskesmas officers.” (Informants 2, 3 and 8)

“There are EWARS Puskesmas officers but they are not yet trained.” (Informant 2)

“There are trained officers but cannot report via SMS center because they do not have the facilities.” (Informant 3)

“There are human resources at the Puskesmas for midwives and nurses, but the office has not yet conducted training and the officers themselves are lazy.” (Informant 8)

The results of interviews regarding human resources in implementing EWARS according to one informant stated that the Puskesmas did not have special EWARS personnel, only hoping for the supply of EWARS personnel by the Regency Health Office. Meanwhile, according to one of the informants, EWARS management personnel are available specifically to make and send reports but have never attended training. The statement of one informant stated that he had EWARS management staff and had attended training, but did not send reports via SMS call center, because he did not have facilities. Another informant stated that there were no special officers managing the EWARS at the Puskesmas so that the EWARS reporting was done by the head of the Puskesmas. Another informant stated that he could not run the program because Human Resources (HR) were minimal, they did not understand (EWARS) and their building was demolished by unknown parties to collect Puskesmas items. Informant 8 stated that there were more than 5 midwives and nurses in all Puskesmas, but they often did not report the Early Warning, Alert and Response System (EWARS) report, due to geographic location that was difficult to reach, unavailability of funds, lack of understanding of the program EWARS, how to fill out reports and be lazy.

3.2.2. Funding sources

Fund, is a resource used to run the Early Warning, Alert and Response System (EWARS) in the Puskesmas. Based on the results of interviews about the sources of funds used in implementing the Early Warning, Alert and Response System (EWARS) program, as quoted from the interview results as follows:

"There are funds sourced from BOK and BPJS." (Informant 2)

"There is no special allocation fund." (Informant 1, 3, 4, 5, 6, 7 and 8)

"There are no funds, so we used BOK and BPJS funds." (Informant 3, and 4)

"Did not get fund from anywhere." (Informant 6, and 7)

Based on an interview about the source of funds to finance the process of the Early Warning, Alert and Response System (EWARS) program; 5 informants stated that there were no sources of funds for the running of the EWARS program at the Puskesmas, 2 informants admitted that they did not run the EWARS program at the Puskesmas, 1 informant stated that all activities carried out in the building, the source of funds came from BPJS funds which were in the distribution of BPJS funds that is, 60% is used for medical services at the Puskesmas and 40% is used for purchasing Office Stationery (ATK) at the Puskesmas. One person stated that the funds used in running the EWARS program at the Puskesmas came from BOK funds. One informant stated that no funds were allocated specifically for the EWARS program, so far we have used BPJS funds to run the Early Warning, Alert and Response System (EWARS) program. Meanwhile, 1 informant stated that there was no special allocation and a clear source of funds, even a special DPA did not exist.

3.2.3. Facilities and Infrastructure

The availability of facilities at the Puskesmas is a supporting facility that is directly used to support the Early Warning, Alert and Response System (EWARS) program at the Puskesmas such as ATK, blank reports, computers, Telkomsel networks, HT / Cell phone networks and Indosat networks. Following are statements from several informants regarding the availability of facilities at several Puskesmas.

"There is a complete EWARS facility in the Puskesmas and it has its own call center." (Informant 2, and 6)

"There is no EWARS facility at the Puskesmas." (Informant 1, 3, 4, 5, 7, and 8)

"We have laptops, but not cell phones." (Informant 3)

"No telecommunication network." (Informant 3, 4, 7, and 8)

The results of the interview regarding the supporting facilities in the implementation of Early Warning, Alert and Response System (EWARS) program at the Puskesmas, where one informant stated that the special facilities and infrastructure to support the EWARS program did not yet exist. One informant stated that the

facilities and infrastructure to support the running of the EWARS program at the Puskesmas were very complete with PC desktop, cell phone as a call center, internet assistance provided by Ministry of Communication and Information, this was also strengthened by the statement of one informant who stated to send an Early Alert System report And the Response (EWARS) usually uses the Puskesmas Mobile as a call center. One informant stated that he only has a laptop. One informant stated that there were no means to support the operation of the EWARS program. One informant stated that there was no facility, a laptop, cell phone or network. One informant stated that there is no internet network, Telkomsel network, but has his own cell phone. One informant stated that apart from the Enarotali Puskesmas, several Puskesmas in Paniai Regency had no available supporting facilities for EWARS reporting.

3.3. The Process Component of EWARS

3.3.1. Source of Data

Data sources are a place to obtain data and information to be reported to the next level. The EWARS data source is a weekly report obtained from the auxiliary health center (Pustu, short for Puskesmas Pembantu in Indonesian), village midwives, outpatients at Puskesmas, private clinics in villages which are sent via SMS to Regency Surveillance Officers and Surveillance Officers of Provincial Health Offices. Based on the results of interviews about data sources in the implementation of the Early Warning, Alert and Response System (EWARS) program as quoted from the interview results as follows:

"The source of EWARS data is taken from daily patient visits to the Puskesmas."

(Informants 4, 6, and 7)

"Data sources are sometimes taken from outside patient visits." (Informant 4)

The results of the interview regarding the implementation of the Early Warning, Alert and Response System (EWARS) program concluded that one informant stated that the EWARS data source was obtained when providing patient health services in the Puskesmas building and patient health services outside the Puskesmas building. One informant stated that the EWARS data source was obtained from patient visit data at the Puskesmas every day, this was also strengthened by the statement of one of the informants who stated that the Early Warning, Alert and Response System (EWARS) report data obtained came from patient visits every day at the Puskesmas.

3.3.2. Data Processing

Data processing is the manipulation of data into a form of data that is easy to read and understand in order to produce meaningful and useful information according to needs. Based on the results of interviews about data processing for reports on the implementation of the Early Warning, Alert and Response System (EWARS) program, as quoted from the interview results as follows:

"Puskesmas does not perform direct data processing; it is reported to the above level."

(Informants 4, 6, and 7)

"Did not carry out direct processing, reported via SMS to the province without reporting to the Regency health office." (Informant 6)

The results of the interview regarding the implementation of the Early Warning, Alert and Response System (EWARS) program concluded that one informant stated that at the Puskesmas only recapitulated data into a blank report to be sent to the Regency Health Office without processing the data. Reports sent to the Health Office are not on time depending on the condition of the Puskesmas, sometimes the report data is sent per week, for two weeks, even once a month depending on the situation and condition of the Puskesmas. One informant stated that he did not process data at the Puskesmas, the data after being entered into the cell phone was immediately sent to the Provincial Surveillance Manager via SMS without knowing the Regency Health Office. One informant stated that at the Puskesmas only recapitulated data into a blank report to be sent to the Regency Health Office without processing the data, the report sent to the Health Office was not timely depending on the condition of the Puskesmas, sometimes the report data was sent by the Head of the Puskesmas per week, two weeks and even sent once a month.

3.3.3. Feedback, Monitoring and Evaluation

Monitoring and evaluation is a monitoring activity carried out by superiors to subordinates in accordance with the workload, which is carried out continuously so that the results are in accordance with the stated objectives. Monitoring and Evaluation of the Early Warning, Alert and Response System (EWARS) is carried out in an effort to continuously monitor diseases with potential extraordinary events (KLB) which require a fast response. Based on the results of interviews regarding Monitoring and Evaluation in the implementation of the Early Warning, Alert and Response System (EWARS) program, as quoted from the interview results as follows:

"Always control before sending reports to the Province." (Informant 2)

"There is no monitoring and evaluation carried out by superiors from either the Health Office or the Head of the Puskesmas." (Informants 2, 3, 4, 6, and 7)

"Always send feedback from the province to the office every month, monitoring and evaluation is not done because of limited funds." (Informant 8)

The results of the interview regarding the implementation of the Early Warning, Alert and Response System Program (EWARS) concluded that 1 informant stated that he always controlled every week before the report was sent to the Province but there was no monitoring and evaluation from the Regency Health Office, 2 informants stated that there was no monitoring and evaluation of Regency Health Office. This was also reinforced by the statements of 2 informants who stated that the Head of the Puskesmas and the Health Office

had never conducted monitoring and evaluation, while one informant stated that the Regency Health Office conducted monitoring and evaluation twice a year, but the EWARS special monitoring and evaluation was not carried out. This was also reinforced by an informant that monitoring, evaluation and feedback could not be carried out due to limited funds.

3.4. The Output Component of EWARS

3.4.1. The Accuracy of the Report

Based on the results of interviews and observations about the accuracy of reports in the implementation of the Early Warning, Alert and Response System (EWARS) program, it is quoted as follows:

o Interview

"On time, every Monday morning, send it to the Province without going through the Regency Health Office, the problem is when the Provincial call center changes its contact number." (Informant 6)

"The time for sending reports is uncertain, sometimes once a week, two weeks or even a month." (Informant 4, and 7)

"There are Puskesmas that send reports but not on time, sometimes once a week, sometimes two weeks, sometimes one month, they don't even report at all." (Informant 8)

o Observation

"The accuracy of the Puskesmas EWARS report according to the 29th week of 2020,

only one Puskesmas reports on time, which reaches 100%, while the other Puskesmas are 0%."

The results of the interview regarding the accuracy of the Early Warning, Alert and Response System (EWARS) report, one informant stated that he always sent reports every week on Monday morning to the Province via SMS without reporting to the Regency Health Office, while 3 informants stated that the report was not sent on time, sometimes one week once, every two weeks, once a month, don't even send a report at all. The results of the report's observation proved that only one Puskesmas had reported being on time, while the other Puskesmas had 0% accuracy of the EWARS report.

3.4.2. The Completeness of the Reports

Based on the results of interviews and observations about the completeness of reports in the implementation of the Early Warning, Alert and Response System (EWARS) program, as quoted from the interview results as follows:

o Interview

"There is no archive, just send it." (Informant 4)

"All data is sent directly via SMS to the Province." (informant 6)

"I gave the data to the head of the Puskesmas, the head of the Puskesmas who reported it." (Informant 7)

"Determining the accuracy of the report, we do not save data from all Puskesmas because it has been a long time." (Informant 8)

o Observation

"The results of observations show that in the 29th week of 2020, only one Puskesmas reported completely, which reached 100%. Meanwhile, other Puskesmas report completeness at 0%."

The results of the interview regarding the completeness of the Early Warning, Alert and Response System (EWARS) report concluded that 3 informants stated that there was no storage of report data at the Puskesmas, all reports after being recapitulated either via SMS or report format were sent directly to the Province. The observation showed that only one Puskesmas had 100% complete report data, while the other Puskesmas had 0% complete EWARS report data.

4. Discussion

4.1. The Input Component of EWARS

4.1.1. Human Resources

The results showed that the human resources in the implementation of the Early Warning, Alert and Response System (EWARS) in Paniai Regency were minimal, only 3 Puskesmas had EWARS management staff with multiple duties, namely Enarotali Puskesmas and Pasir Putih Puskemas having EWARS management staff with dual duties as KTU Puskesmas, and the Epouto Puskesmas have EWARS management staff with dual duties as the Head of the Puskesmas. It was made clear by the Head of the Enarotali Puskesmas and the Head of the Pasir Putih Puskesmas that the resources in the implementation of Early Warning, Alert and Response System (EWARS) at the Puskesmas were available. According to the Regulation of the Minister of Health of the Republic of Indonesia Number 45 of 2014 concerning the implementation of the Health Epidemiology Surveillance System, it is stated that the number of surveillance officers at the health center level is 1 skilled epidemiology officer. Based on these indicators, 3 Puskesmas have met the indicators of the availability of surveillance officers at the Puskesmas level, however, each officer in the study is not an officer who has served as an Epidemiology Functional [9]. This research is in line with research conducted by Vita and his colleagues in Salatiga Regency, Central Java that in the input aspect, the number of EWARS program implementers in the City of Salatiga has fulfilled the EWARS program implementing staff, but the problem is that all EWARS program officers have never received training at all [10]. According to the results of interviews with the Head of the Obano Puskesmas, the EWARS program activities cannot be implemented due to the lack of equal distribution of human resources from the Regency Health Office to the Puskesmas, most of the health human

resources are piled in urban areas, while the periphery and rural areas are not yet as needed. The unequal distribution of personnel causes the program at the Puskesmas was not run well. Puskesmas with minimum human resources, usually 1 person doing more than one program concurrently. This will affect the performance of officers in providing EWARS data and reports. The success of implementing the EWARS program is largely determined by the human factor that carries out the EWARS's duties and functions. For this reason, the EWARS officers should be equipped with competent human resources so that they can carry out the EWARS program properly and responsibly. Based on the results of the study, the lack of personnel at the Puskesmas was minimized by means of mutations in the number of underpowered people. Mutation is a task shifting process to anticipate a shortage of manpower in increasing work production in the organization.

4.1.2. Funding sources

The research results obtained that the source of funds came from BPJS funds and non-salary BOK funds for Puskesmas, in providing primitive and preventive health services, in accordance with the Minimum Service Standards (SPM). Meanwhile, BPJS funds are used to pay for medical services (60%) of the total JKN Puskesmas capitation receipts and (40%) are used to support operational costs of Puskesmas. This was admitted by the informant as the head of the Puskesmas that there was no allocation of special funds for the EWARS program by the Regency Health Office. Funds at the Puskesmas come from the BOK and BPJS but these funds are not always available every week so that it will indirectly affect the work performance of EWARS program managers. There is no special allocation because it is considered a routine task for EWARS officers at the Puskesmas. The Puskesmas is the spearhead of the first health service, so that the Head of the Puskesmas is expected to compile a Puskesmas RKA without neglecting other programs, it would be good if the Head of the Puskesmas can explain the benefits of BOK and BPJS funds in running programs at the Puskesmas and be able to manage finances, as well as a clear delegation of work authority.

4.1.3. Guidelines of EWARS

The availability of the Early Warning, Alert and Response System (EWARS) Guidebook is expected to facilitate and improve the performance of officers. Based on the results of interviews and observations, it was shown that of the five Puskesmas which were the objects of the EWARS study, they did not have a EWARS manual, only a weekly reporting form was available (W2). This was admitted by the informant as the EWARS manager that the Puskesmas did not have a manual, only a report format. According to the Indonesian Ministry of Health [5], the guidelines used are three EWARS series books, namely the Early Alert and Response Guidebook, the Disease Diagnosis Algorithm Book and the Infectious Disease Early Warning Software Handbook. Based on these indicators, the Puskesmas does not meet the indicators for the availability of EWARS guidelines, only having a W2 form. The availability of the W2 form in all Puskesmas in Paniai Regency will facilitate reporting activities carried out by officers. This is in line with research conducted by Wikansari and his colleagues [10] that 33% of the Puskesmas in Salatiga Regency did not have a guidebook. The availability of the manual will affect the quality of reporting performance in terms of timeliness and accuracy of data.

4.1.4. Facilities and Infrastructure

The implementation of the EWARS program in the Puskesmas needs supporting facilities such as ATK, software, telecommunication networks, HT, laptop, and cell phones, where the parameters of the availability of the facilities refer to the Kepmenkes RI No. 1116 / MENKES / SK / VII / 2003 concerning Guidelines for the Implementation of Health Epidemiology Surveillance must be available equipment and equipment packages for the Implementation of Surveillance Package and Computerized Package. The results of interviews and observations show that the Enarotali Puskesmas already has supporting facilities in the form of stationery, cell phones, software and Indosat/Telkomsel networks which are spent using BPJS funds and assisted by the Ministry of Communication and Information in the form of a WIFI Network. This is in accordance with the indicators of Epidemiological Surveillance, while the Pasir Putih and the Epouto Puskesmas have ATK, HP and Laptops, but their own cell phones and laptops, while the Telkomsel / Indosat network is not available, transportation is very difficult to reach. The Puskesmas is the spearhead of surveillance. It should have complete and adequate supporting facilities, so that the EWARS program can run. Lack of supporting facilities at the Puskesmas will result in incomplete data, thus affecting the performance and quality of the report data that is not good. In order to minimize the shortage of facilities at the Puskesmas, it is hoped that an increase in the proposal for the Regency APBD Fund, there is a need for cross-sectoral coordination and improvement in good and transparent financial managerial.

4.2. The Process Component of EWARS

4.2.1. Data sources

The EWARS data processing according to the Indonesian Ministry of Health (2012) comes from village midwives, outpatients, private clinics in villages. The results of this study indicate that the EWARS data source at the Puskesmas only comes from the Puskesmas visit reports every day of one week. This is not in accordance with the guidelines for implementing the Early Warning, Alert and Response System (EWARS) indicators. The EWARS report data comes from village midwives, outpatients, private clinics in the working area of each Puskesmas, private clinics should also report to the Puskesmas surveillance manager, but all reports from private clinics and doctor practices are not sent to the Puskesmas and to the Health Office. This situation greatly affects the completeness of data and information on health and service descriptions in an area, making it difficult to plan future health service needs and experience obstacles in taking action in the event of a health situation that is detrimental to the community.

4.2.2. Data processing

The EWARS data processing uses a computer equipped with an application called the EWARS ID application originating from the Ministry of Health of the Republic of Indonesia which is applied at the Provincial, Regency to Puskesmas levels. The results showed that in one Puskesmas did not perform data processing using the EWARS application but the data was collected, recapitulated into the Puskesmas Call Center cell phone and then sent to the Province via SMS every Monday without knowing the surveillance manager of the Paniai Regency Health Office. Often experiences difficulty in sending reports to the Provincial Survelans Manager if it

is on holidays and at the Call Center the Provincial EWARS manager changes the contact number. Meanwhile, 2 Puskesmas still do not routinely process data either by application or manually, patient visit data are recapitulated into a weekly report format (W2) and then reported to the Paniai Regency Health Office Surveillance Manager without leaving the archives at the Puskesmas. The timing of reporting the EWARS report does not depend on the condition of the officers at the Puskesmas. The Regency Manager enters the report data from the Puskesmas which reports on time and then it is sent to the Province via Email on Tuesday, however, Regency Officers do not perform data analysis. Based on the Indonesian Ministry of Health (2012) regarding the Guidelines for Early Warning, Alert and Response Systems (EWARS). The data comes from the Pustu, village midwives, sent via SMS according to the weekly surveillance format to the Puskesmas on Saturday afternoon, the Puskesmas sends the data to the Regency Level via SMS, HT, and others. On Monday morning, Regency Surveillance Officers perform data entry and send export files to the Province via email. On Tuesday morning, Regency Surveillance Officers perform data analysis and produce Weekly Reports. Reporting, processing and data entry of Puskesmas do not run according to the indicators of Health Regulation (2012) due to limited human resources in the form of quantity and quality, where the EWARS Puskesmas manager has more than 2 programs of workload, limited time, has never attended EWARS training, source unclear funds and the absence of facilities and EWARS manual at the Puskesmas and at the Paniai Regency Health Office. Whereas in order to improve the ability to manage data and health information, a national Health Surveillance System is needed so that data and information are available regularly, continuously, and are valid as part of the decision-making process in health efforts both locally and nationally as well as contributing to global commitments [9]. Surveillance performance assessment can be measured by completing reports. Completeness of the report data will show the current condition of the population. The community prefers to frequently seek treatment at the family mantri (male nurse) practice, the doctor's practice, and the nearest clinic. This will affect the quality of the data, so it is hoped that the Health Office will provide instructions in the form of an obligation to report a visit report to the Regency Health Office. Reports received at the Regency Health Office do not become an iceberg phenomenon, but rather are easy to describe the real conditions in a community population.

4.2.3. Feedback, monitoring and evaluation

Monitoring and evaluation and feedback is a monitoring activity carried out by superiors towards subordinates in accordance with the workload, which is carried out continuously so that the results are in accordance with predetermined goals. The results of this study indicate that there is no feedback, monitoring and evaluation carried out by the head of the Puskesmas towards the EWARS Puskesmas managers, likewise Regency managers do not carry out monitoring and evaluation and feedback but are delivered verbally to the head of the Puskesmas when delivering Monthly Reports to the Health Office. According to the Indonesian Ministry of Health (2012), monitoring of Regency level reports is carried out every Monday morning, checking if all formats from the Puskesmas have been received. Contact the Surveillance Officer for incomplete information. The feedback from the Regency and Provincial Surveillance sections will produce a summary Weekly Report (Weekly Bulletin). Feedback on EWARS reporting is carried out in order to ensure continuity of reports, timeliness, and completeness of data and to improve reporting quality and is a form of direct supervision and control. With the existence of feedback from superiors can improve and increase work motivation for program

managers.

4.3. The Output Component of EWARS

4.3.1. Accuracy of the Puskesmas reports

The results showed that only one Puskesmas reported on Monday morning where the accuracy of the reports reached 100%. This is in accordance with the indicator of the accuracy of the report of $\geq 80\%$ according to the Kepmenkes RI No. 45 of 2014 concerning the Implementation of a Health Epidemiological Surveillance System. This can be proven by the EWARS report archive at the Puskesmas. Sometimes I have difficulty reporting when the Provincial Call Center changes the Contact Number. Meanwhile, other Puskesmas did not report on time depending on the condition of the Puskesmas and the condition of the EWARS manager due to multiple assignments, limited funds, distance of delivery and no supporting facilities as well as the absence of monitoring and evaluation and routine report feedback. This is reinforced by observations that show the accuracy of reports from which one Puskesmas reports 100% on time, while other Puskesmas report timeliness of EWARS reports reaching 0%. The accuracy of reports in accordance with the indicators of report accuracy is $\geq 80\%$ according to the Republic of Indonesia Minister of Health Decree No. 45 of 2014 concerning the implementation of a health epidemiological surveillance system.

4.3.2. The Completeness of the reports

Many EWARS officers have multiple tasks, so they are not maximal in running the program, lack of supporting facilities and there is no special allocation fund for implementing the EWARS program at the Puskesmas, resulting in a lack of work motivation. The results of interviews and observations showed that only one Puskesmas had complete EWARS reporting reaching 100% in accordance with the indicator of completeness of the EWARS report of 90% according to the Republic of Indonesia's Minister of Health Decree No. 45 of 2014 concerning the Implementation of Health Epidemiology Surveillance System, while the other Puskesmas did not complete reporting EWARS to reach 0%, 3 Puskesmas in accordance with the indicator accuracy of the report, namely 90%.

5. Conclusion

Based on the research results, it can be concluded that:

- a. Lack of human resources in implementing the early alert system and response, both in terms of quantity and quality.
- b. There is no Special Allocation Fund (DAK), in the management of the EWARS program; it is only assisted by BOK and BPJS funds.
- c. Puskesmas have ATK facilities, but do not have other supporting facilities in the form of software, Indosat / Telkomsel networks, HT and cell phones.
- d. EWARS report data at the Puskesmas were obtained from daily patient visits to the Puskesmas.
- e. EWARS Puskesmas officers do not process data, but only recap the data.
- f. There is no monitoring and evaluation of the EWARS program by the Regency health office

administrators.

- g. In general, EWARS data reporting from all Puskesmas was not on time, only one Puskesmas reported on time.
- h. Puskesmas do not have complete EWARS data, because they do not keep records at the Puskesmas.

6. Suggestion

There are a number of suggestions regarding the finding of this research:

- a. To the Ministry of Health. For the sake of implementing the surveillance program in the Papua Province region, it is hoped that the offline-based reporting system can be implemented because the network is one of the obstacles in the process of sending EWARS reports.
- b. To the Paniai Regency Government. a) Provide adequate road transportation so that it is easily accessible by two-wheeled vehicles; b) Providing Regency wifi in collaboration with the Ministry of Communication and Information.
- c. To the Paniai Regency Health Office. a) There is a need for socialization of EWARS to Puskesmas regarding the importance of the EWARS program, thereby increasing insight and knowledge for Puskesmas staff; b) Need to improve training for managers of the Puskesmas EWARS so that they do not experience difficulties in entering, reporting and processing data in order to understand the conditions of the local Puskesmas area; c) Reaffirming private clinics by providing official practice licenses to report data on a weekly basis to Puskesmas; d) Need to transfer employees to all Puskesmas by making a special agreement so as to reduce the dual workload; e) Need to complete the supporting facilities for EWARS management at the Puskesmas; f) Allocating special EWARS funds to meet the shortage of funds for routine weekly reports at Puskesmas; g) Carry out regular monitoring and evaluation to monitor the implementation of the EWARS program at the Puskesmas.
- d. To the Puskesmas in Paniai Regency. a) Improve coordination between the Health Office and Puskesmas as well as with staff at the Puskesmas; b) There is a need for good management of Puskesmas filing and financial transparency to staff.
- e. To Researchers. Future researchers are expected to be able to research and dig in depth about the Evaluation of the Early Warning, Alert and Response System (EWARS), so that they can get more information.

Acknowledgment

The author's gratitude goes to all informants who have been participated in the study. We would also like to express our appreciation to Paniai Regency Health officers, and head of the Puskesmas.

References

- [1]. A.B. Suthar, L.G. Allen, S. Cifuentes, C. Dye, and J.M. Nagata. "Lessons learnt from implementation of the International Health Regulations: a systematic review." *Bull World Health Organ*, vol. 96(2), pp. 110–121, Feb 2018.

- [2]. J-P. Chretien, H.S. Burkom, E.R. Sedyaningsih, R.P. Larasati, A.G. Lescano, C.C. Mundaca, et al. "Syndromic surveillance: adapting innovations to developing settings." *PLoS Medicine*, vol. 5(3), pp. e72, Mar 2008.
- [3]. B.J. Paterson, and D.N. Durrheim. "Surveillance system evaluations provide evidence to improve public health practice," *Online J Public Health Inform*, vol. 7(1), May 2015.
- [4]. WHO. *International health regulations (2005)*, 3rd ed. Geneva: WHO, 2016.
- [5]. Kemenkes RI. *Buku Pedoman Sistim Kewaspadaan Dini*. Edisi Revisi Tahun 2012. Jakarta: Kementerian Kesehatan Republik Indonesia, 2012.
- [6]. Pemda Kabupaten Paniai. *Profil Kabupaten Paniai Tahun 2019*. Enarotali: Pemerintah Daerah Kabupaten Paniai, 2020.
- [7]. Dinkes Kabupaten Paniai. *Profil Kesehatan Kabupaten Paniai Tahun 2018*. Enarotali: Dinas Kesehatan Kabupaten Paniai, 2019.
- [8]. Kemenkes RI. *Sistim Kewaspadaan Dini dan Respons (SKDR)*. Jakarta: Dirjen PP&PL Kementerian Kesehatan Republik Indonesia, 2020.
- [9]. Kemenkes RI. *Peratutasn Meteri Kesehatan Republik Indonesia Nomor 45 Tahun 2014 tentang Pengorganisasian Puskesmas*. Jakarta: Kementerian Kesehatan Republik Indonesia, 2014.
- [10]. N. Wikansari, D.B. Santoso, D. Pramono, D.W. Widarsih. "Evaluation Program Early Warning Alert and Respon System (EWARS) Dalam Pelaksanaan Surveillance KLB Kota Salatiga, Provinsi Jawa Tengah," *Jurnal Manajemen Informasi dan Administrasi Kesehatan (J-MIAK)*, vol. 2(1), 2019.