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Effectiveness of the Role of Epidemiological Surveillance in the Management of Communicable Diseases and Immunization-Preventable Diseases (PD3I) in Serang District

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ABSTRACT

Epidemiological surveillance is currently a very important element in facing the challenges of managing infectious diseases that continue to grow. Infectious diseases such as dengue fever (DHF), tuberculosis (TB), and new emerging or re- emerging diseases pose a serious threat to public health (MOH, 2024) . At the local level, such as in Serang District, weaknesses in the surveillance system can hinder the control of infectious diseases that have dynamic patterns of spread. The findings in the field are (a) the high incidence of infectious diseases which are still a serious challenge for the community. Diseases such as dengue, tuberculosis, and diarrhea continue to show incidence patterns that require special attention. (b) Epidemiological surveillance is a very important tool in detecting, monitoring and responding to the spread of disease quickly and accurately. The purpose of the study was to identify the strengths, weaknesses, opportunities, and threats that exist in the organizational plan and examine the external environment and to identify opportunities and threats to the epidemiological surveillance program in controlling infectious diseases and PD3I in Serang District. This research uses a qualitative approach with interview and observation methods. The strategies carried out are supporting DHO policies, increasing the use of information technology to accelerate information, and coordination with stakeholders related to infectious diseases and PD3Is. Then the need for appropriate technological innovation in the use of applications, the need for regular training, and adding technological infrastructure such as computers and cell phones. And the need for coordination with other related agencies, new disease information to be fast, and coordination with the promkes section. As well as remote health facilities need to be fostered regularly and the use of technology in an appropriate manner.

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INTRODUCTION

Epidemiological surveillance is currently a very important element in facing the challenges of managing infectious diseases that continue to grow. Infectious diseases such as dengue fever (DHF), tuberculosis (TB), and new emerging or re-emerging diseases pose a serious

threat to public health (MOH, 2024) . In a global context, the COVID-19 pandemic has shown that without an effective surveillance system, early detection, monitoring and rapid response efforts to outbreaks are not maximized (Ikhtiyaruddin et al., 2022) . At the local level, such as in Serang District, weaknesses in the surveillance system can hinder the control of infectious diseases that have dynamic spread patterns.

Health surveillance is a systematic and continuous observation data and information about the occurrence of diseases or health problems and conditions that affect the increase and transmission of diseases or problems to obtain and provide information to direct control and control actions effectively and efficiently (Ministry of Health, 2018).

The implementation of epidemiological surveillance is regulated by the Decree of the Minister of Health of the Republic of Indonesia Number 1479/Menkes/Sk/X/2003 concerning Guidelines for the Implementation of an Integrated Epidemiological Surveillance System for Communicable Diseases and Non-Communicable Diseases which states that "surveillance or epidemiological surveillance is a systematic and continuous analysis of diseases or health problems and conditions that affect the increase and transmission of diseases or health problems, in order to take effective and efficient countermeasures through the process of data collection, processing and dissemination of epidemiological information to health program administrators"

The urgency of this problem is increasing as new risk factors, such as climate change, urbanization and high population mobility, accelerate the spread of disease. Epidemiological surveillance is needed to ensure early detection of outbreaks and provide accurate data on which to base strategic decision-making. The system also supports the evaluation of control programs and the planning of more effective interventions, such as target prioritization and identification of high-risk groups (Priatna et al., 2018)

However, in reality, the implementation of epidemiological surveillance still faces various obstacles, including a lack of trained human resources, limited supporting technology, and suboptimal cross-sector coordination. According to (Azmiyannoor et al., 2023) , factors inhibiting the implementation of mapping disease incidence come in terms of policies, methods, human resources, and motivation. These factors are the absence of an obligation to conduct spatial analysis, no specific skill qualifications for surveillance officers, training that is too short and without guidelines, spatial analysis facilities are not fully available, officers do not have spatial analysis expertise, time constraints due to the busy activities of officers, and fellow officers do not support each other to improve their ability to conduct spatial analysis. While research (Hasnanisa et al., 2022) , explains the obstacles in several input, process, and output components that do not meet the standards. In the input component, the problems found were the limited number of officers, especially the TB Wasor (Man), lack of training for officers (Man), limited funds (Money), limited transportation facilities (Material), limited TCM tools (Material), unavailability of library facilities (Material), and slow access to the SITB application (Material). In terms of the process component, the problems found were not achieving indicators of completeness and timeliness of reporting by the

reporting unit (data collection) and not conducting analytical analysis (data analysis). If the role of epidemiological surveillance is not improved, the ability to respond quickly to outbreaks and prevent the spread of disease will be compromised, resulting in increased morbidity, mortality and economic burden.

Based on the number of infectious disease cases in Serang district in 2024, the number of PD3I cases, namely the first measles suspect, 138 people, AFP, 30 people, pertussis suspect, 17 people, diphtheria observation cases, 8 people, and tetanus neonatorum suspect, 4 people. These data reflect the need to strengthen disease control and prevention efforts through improved access to health services, community education, and more effective surveillance programs. Support from the government, health workers, and community participation are key to reducing the number of infectious disease cases and PD3Is in Serang District.

The findings in the field are (a) the high incidence of infectious diseases, which is still a serious challenge for the community. Diseases such as dengue, tuberculosis, and diarrhea continue to show patterns of incidence that require special attention. (b) Epidemiological surveillance is a very important tool in detecting, monitoring and responding to the spread of disease quickly and precisely. It provides accurate data, which forms the basis for strategic decision-making to manage outbreaks and prevent further spread. Researchers see the importance of evaluating the effectiveness of the role of epidemiological surveillance so that its function can be maximized in supporting infectious disease control efforts.

In addition, researchers also saw gaps in the implementation of the epidemiological surveillance system. Challenges such as limited trained human resources, lack of supporting technology, and weak coordination between agencies are the main obstacles that affect the effectiveness of disease control. This condition encourages researchers to dig deeper into how these obstacles can be overcome to improve the performance of the surveillance system.

The previous research related to infectious disease control in Serang Regency is research (Yuningsih & Kusumastuti, 2024) on "HIV/AIDS Disease Control and Prevention Strategies in Serang Regency in 2024". The type of research is qualitative with analysis carried out through the IFE and EFE approaches of SWOT analysis and continued by AHP. Then the research by (Fitria et al., 2024) entitled "Evaluation of Tuberculosis Notification in Serang Regency (An Evaluation Research Using Realist Evaluation)" used a concurrent embedded mix method with purposive sampling method and obtained twelve informants. The purpose of the study was to evaluate tuberculosis notification in Serang Regency in identifying the coverage of tuberculosis discovery (treatment coverage) in Serang Regency, identifying the success rate of tuberculosis treatment in Serang Regency and identifying the problems of recording and reporting tuberculosis in Serang Regency. Research (Kurniatillah et al., 2022) with the title "Leprosy Situation in Serang Regency in 2020" with quantitative methods. The sample was 175 leprosy patients. The analysis was carried out through summary processing and review of available data based on the findings/data/reports of the

Communicable Disease Prevention and Control section of the Serang District Health Office in 2020. And also research (Lutfiyah et al., 2024) entitled "Overview of Environmental Characteristics and Maternal Knowledge About Diarrhea in the Kibin Health Center Work Environment, Serang Regency in 2024". This research was conducted using quantitative research methods with an analytic cross sectional study design. The sample was 51 mothers.

The findings of PD3I cases in Serang District are measles suspects with 138 people, AFP with 30 people, pertussis suspects with 17 people, diphtheria observation cases with 8 people, and neonatal tetanus suspects with 4 people. The data shows that there are still cases of infectious diseases, especially PD3Is in Serang District, which requires solutions from the Health Office, especially the epidemiological surveillance program. The findings in the field are (a) the high incidence of infectious diseases which is still a serious challenge for the community. Diseases such as dengue, tuberculosis, and diarrhea continue to show patterns of incidence that require special attention. (b) Epidemiological surveillance is a very important tool in detecting, monitoring, and responding to the spread of disease quickly and accurately.

The researcher determines the research objectives based on the formulation of the problem above as follows, namely to identify strengths, weaknesses, opportunities, and threats that exist in the organizational plan and examine the external environment and to identify opportunities and threats to the epidemiological surveillance program in controlling infectious diseases and PD3I in Serang District.

METHODS

This research uses a qualitative approach with interview and observation methods to identify the strategies used in the epidemiological surveillance program in Serang district. The technique used is source triangulation, which is through the process of comparing and rechecking the level of trustworthiness of information obtained from various times and different devices in research.

The application of this method can be achieved by comparing data obtained from observation with the results of interviews, observation and documentation. Comparing the interview information given remains consistent and is supported by documentation data in the form of photos and other data.

This study is a program evaluation research that aims to determine how far the plan can be implemented and how far the objectives are. The type of evaluation research used is formative evaluation. This evaluation tends to emphasize and improve objects by assessing the quality of programs, inputs and so on. And used to get an evaluation of an activity in the form of a process, so that it can be used to improve the effectiveness and efficiency of the program.

This research activity will be carried out at the Serang Regency Health Office and Puskesmas, the research time is January 2024 to February 2025. Research informants were

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selected based on purposive sampling, namely the holder of the epidemiological surveillance program. The data sources taken in this study are primary data and secondary data, primary data is taken directly from research informants, namely through observation and in-depth interviews. The research data collection used indepth interview techniques with informants as many as 5 people samples were selected from the number of Puskesmas in Serang Regency by means of judgment sampling by taking the number of samples with certain criteria (4 people from the Puskesmas and 1 person from the Health Office.

Then the analysis to find out the condition of the program mapping is carried out through the Internal Factor Evaluation (IFE) and External Factor Evaluation (EFE) approaches. The final step is to formulate alternative strategies based on SWOT analysis to determine the policies to be taken. SWOT analysis was developed by Pearce and Robinson (1998) in order to know exactly the real position. So that a SWOT quadrant matrix can be obtained which can be explained as follows: 1) Quadrant I (positive, positive), 2) Quadrant II (positive, negative), 3) Quadrant III (negative, positive), and 4) Quadrant IV (negative, negative).

The SWOT matrix as developed by Kearns (1992) features eight boxes, with the top two being external factors (opportunities and challenges) and the left two being internal factors (strengths and weaknesses). SWOT analysis is the systematic identification of various factors to formulate a strategy.

Kasanuddin (2011: 18) says that the indicators of the quality of human resources are as follows: a) Intellectual quality includes knowledge and skills), b) Education, c) Understanding the field, d) Ability, e) Work spirit and f) Organizing planning ability. According to Nafarin (2004) a budget is a periodic financial plan prepared based on an approved program. A budget is a written plan for an organization that is expressed quantitatively and generally expressed in units of money for a certain period of time. Based on this, it can be seen as follows in the table below:

Table 4 Research Indicators

No.	Variables
1.	Role
2.	Data Collection and Processing
3.	Follow-up and Countermeasures

Theoretical Framework

Policy is concerned with planning, making and formulating decisions, implementing decisions, and evaluating the impact of the implementation of these decisions on the many people who are the target of the policy (target group). Thomas R. Dye defines policy as what the government chooses to do or not do (Dye, 1995: 1). Based on this definition, the author understands that there is a difference between what the government will do and what the government actually has to do.

The term policy comes from Greek, Sanskrit and Latin. "The root words in Greek and Sanskrit are polis (city-state) and pur (city) developed in Latin into politia (state) and finally in middle English policie which means dealing with public problems or government

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administration". (William N. Dunn, 2003: 52)

Conceptual Fram

The researcher's research conceptual framework is as follows:

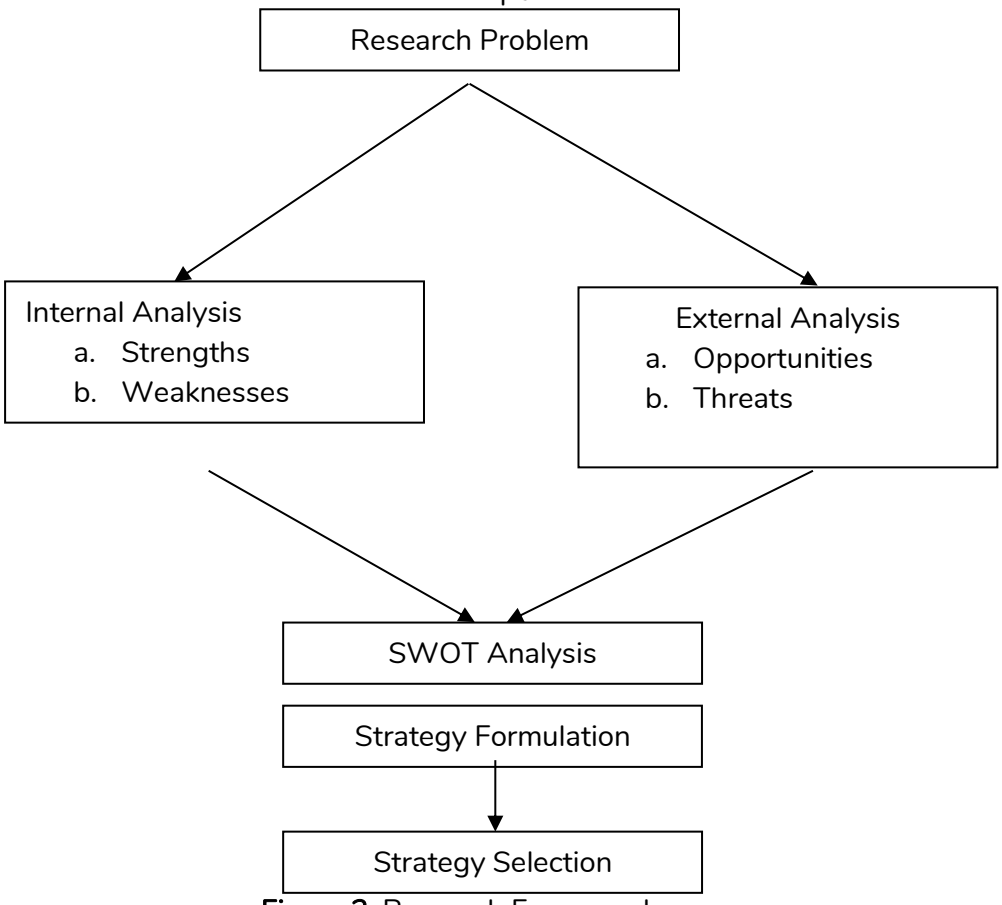

Figure 2. Research Framework

RESULTS

Analysis of the General Description of the Research Object

As for the research based on the aspects of the surveillance role that exist in surveillance officers, the indicators in this study are education and training. Education and training is an important role in seeing the effectiveness of an organization. Education and training becomes a process of changing untrained employees into capable employees, and employees can now be developed to be given new responsibilities. From the above, it was found that 2 people have a diploma three education, 2 people have a bachelor's degree, and one person has a bachelor's degree. In this case all have received training on surveillance. From the above, the researcher concludes that the minimum education for surveillance is sufficient in the implementation of surveillance.

In accordance with the definition put forward by Harsono (2011) that education and training is a teaching and learning process using certain techniques or methods, in order to

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improve the skills of a person or group of people in handling tasks and functions through systematic and organized procedures that take place in a relatively short period of time. From these defines, it can be seen that with the fulfillment of surveillance officer education, it is expected that the human resources aspect for officers has been fulfilled. However, it is better if those who still have a diploma three education are encouraged to continue their education again so that through the undergraduate program the concept becomes more mature. For those with a bachelor's degree, it is recommended that they continue to pursue a master's degree so that their theoretical thinking concepts become more honed and they are able to make strategic decisions *based on evidence*. For officers at the Health Office, it is in accordance with their education and strata, namely officers at the Health Office have a bachelor's degree in epidemiology, so that strategic decisions to overcome outbreaks can be fast and precise.

In this case, education and training have a role in determining the effectiveness and efficiency of the organization. According to Simamora (2007: 278), some of the real benefits derived from education, training and development programs are one of which helps employees in their personal improvement and development. As for the work experience of these officers, most of them have been above ten years so it is expected that most of them have mastered their work.

Effectiveness of Epidemiological Surveillance Role Based on Aspects of Surveillance Role

Based on the results of interviews with respondents about how the role of epidemiological surveillance in monitoring infectious diseases and PD3I in Serang Regency, the interview results were obtained, namely the first respondent:

1. For first responders: *"Finding potential outbreak cases as early as possible and collecting case specimens to be sent to the referral laboratory"*
2. In the second respondent: "*Survey plays a role in disease monitoring as a provider of information on the presence of an infectious disease and PD31*"
3. To the third respondent: "*Collecting data to prevent control of infectious diseases. Supporting the national immunization program. Early detection and rapid response to PD3I diseases*"
4. In the fourth respondent: "*Playing a role in early detection and rapid response to infectious diseases or PD3I so that outbreaks do not occur*."
5. To the fifth respondent: "*Epidemiological surveillance plays an important role, namely with this activity it can detect outbreaks early and try to respond quickly. Planning and decision making and increasing vigilance*".

Based on the above, it can be concluded that the role of epidemiological surveillance in monitoring infectious diseases and PD3I in Serang District is as early detection and rapid response to outbreaks. Based on the results of interviews with respondents, what are the main challenges faced in implementing epidemiological surveillance?

1. In the first respondent: "*In the first respondent, limited human resources so that surveillance officers do not have a special schedule for the program and lack of funds*

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for surveillance activities"

2. In the second respondent: "*the capacity of surveillance officers has not been optimized so that the performance of epidemiological surveillance has not been seen*"
3. In the third respondent: "*time constraints due to the busy activities of officers*"
4. In the fourth respondent: "*limited resources, coordination and technology*"
5. For the fifth respondent: "*limited resources, poor data quality. Lack of laboratory tests. Changing demographics, lack of community participation. Trained health workers and support staff. Follow up in the field is late. Doubel job of surveillance officers with other duties. Functional positions are not yet epidemiologists. requires strong coordination*".

Based on the above, it can be concluded that in this case the respondents get the conclusion that what are the main challenges faced in the implementation of epidemiological surveillance, namely the busy activities of officers due to many activities due to their positions or main tasks. function overlap. Based on the results of interviews with respondents about How often is data collection related to infectious diseases and PD3I?

1. For the first respondent: "*Every week*"
2. Second respondent: "*Every week and every time there is a case of infectious disease that has the potential for an outbreak*"
3. In the third respondent: "*every day if there is a report, reported once a week to the score*"
4. For the fourth respondent: "*Every day and reported once a week*"
5. In the fifth respondent: "*once a week report*"

Based on the above, it can be concluded that in this case the respondents get the conclusion that how often data collection is carried out related to infectious diseases and PD3I, namely once a week, this is consistent between the respondents of the Puskesmas and the Health Office.

Effectiveness of Epidemiological Surveillance Roles Based on Aspects of Collection and Processing Processes

Based on the results of interviews with respondents about the recording and reporting system for infectious disease cases and PD3I in Serang District?

1. In the first respondent: "*Data collected every week from services inside and outside the Puskesmas building, private health facilities, PDM, PBM, cadres, the community are recapitulated by the surveillance officer and then reported through the SKDR web.*"
2. Second respondent: "*it's good*"
3. In the third respondent: "*measles has used the MR tool/sheet*".
4. In the fourth respondent: "the *recording system already uses a score system*"
5. In the fifth respondent: "*reports once a week inside and outside the building as well as health facility reports are reported in order to describe cases in aggregate in the SKDR, if there are case findings can be seen in the SKDR*"

Based on the above, it can be concluded that in this case the respondents get the conclusion that the system for recording and reporting cases of infectious diseases and PD3I in Serang District, namely in this case the reporting system has been reported

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routinely in this case a report once a week is reported in order to describe cases in aggregate entered into SKDR, if there are case findings can be seen in SKDR.

Based on the results of interviews with respondents about whether the data collected is integrated with the national health information system?

1. In the first respondent: "*Already*"
2. Second respondent: "*data has been integrated through SKDR*"
3. In the third respondent: "*already*"
4. In the fourth respondent: "*already*"
5. To the fifth respondent: "*integrated in SKDR and EWARS*"

Based on the above, it can be concluded that in this case the respondents get the conclusion that whether the data collected has been integrated with the national health information system, namely the data has been integrated with the SKDR. Based on the results of interviews with respondents about the quality and timeliness of reporting data on infectious disease cases and PD3I?

1. For the first respondent: "*Complete and on time*"
2. In the second respondent: "*the quality of data accuracy is good*"
3. In the third respondent: "*it is in accordance with exactly 100 percent*"
4. On the fourth respondent: "*100 percent*"
5. In the fifth respondent: "*the indicators that we hold are measured through SKDR to assess the quality of accuracy and completeness, for the DHO level we have reached the target*".

Based on the above, it can be concluded that in this case the respondents get the conclusion that the quality and timeliness of reporting data on infectious disease cases and PD3I is 100 percent correct.

Effectiveness of Epidemiological Surveillance Role Based on Follow-up and Aspects

Based on the results of interviews with respondents about the results of epidemiological surveillance used in decision making for infectious disease and PD3I prevention.

1. In the first respondent: "*Because of the availability of information about the situation, disease trends, and risk factors and public health problems, it is possible to make the right decisions for outbreak management.*"
2. Second respondent: "*PE forms are available both manually and electronically, making it easier to make decisions*"
3. In the third respondent: "*as accurate information for early detection of potential outbreak diseases and can detect early sources of case data so that they can be studied further*".
4. In the fourth respondent: "*through systematic and continuous data collection, analyzing and interpreting data systematically and continuously.*"
5. To the fifth respondent: "*Epidemiological surveillance is important, including early detection of potential outbreaks or outbreaks and monitoring of disease trends and*

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planning decision making, as well as helping to prevent infectious diseases. Early identification of cases quickly. SKDR tools and event based surveillance. utilize networks so that signals can be detected so that responses can be fast"

Based on the above, it can be concluded that in this case the respondents get the conclusion that surveillance is used for early detection of disease and decision making in rapid response. Based on the results of interviews with respondents about the effectiveness of actions taken after the discovery of cases of infectious diseases or PD3I in this area?

1. First respondent: "*Very effective because it can immediately deal with cases so that there is no outbreak*"
2. Second respondent: "*very effective in minimizing outbreaks*"
3. In the third respondent: "*fast response has been effective, there is no expansion of transmission*"
4. In the fourth respondent: "*no answer*"
5. In the fifth respondent: "*action is effective if data has been found early on the source of the disease. So that when it is successfully detected, it can be easily found the source*"

Based on the above, it can be concluded that in this case the respondents came to the conclusion that surveillance is very effective in the early detection process. Based on the results of interviews with respondents, is there cooperation with other agencies in controlling infectious diseases and PD3I? If yes, what is the form of cooperation?

1. For the first respondent: "*MOU with private clinics in the Puskesmas working area*"
2. In the second respondent: "*there is already a network of health facilities in each puskesmas but for reporting it is not optimal, a mou and a network of puskemas have been made.*"
3. In the third respondent: "*with the village with cooperation to announce to the community to carry out immunization and for its citizens to routinely check their health*"
4. In the fourth respondent: "*none*"
5. In the fifth respondent: "*in the form of networking, if there is a case, it needs to be inter-professional and cross-program (epidemiologist, lab, health, etc.). Cross-programs, for example, when a case occurs, involve other roles such as schools, sub-districts) then increase the network around the puskesmas, private facilities so that information can be verified earlier)* "

Based on the above, it can be concluded that in this case the respondents get the conclusion that the collaboration carried out includes cross-professional and cross-program.

SWOT Analysis of the Effectiveness of Epidemiological Surveillance Role

Based on the research results and theoretical explanations described above, to support the effective role of epidemiological surveillance and overcome research variables that are not optimal enough, strategies can be developed as recommendations for epidemiological surveillance. SWOT analysis can be used to develop strategies in

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epidemiological surveillance at the Puskesmas. The following is a SWOT analysis of the Serang District Health Office's epidemiological surveillance program

Table 7. SWOT analysis of surveillance program in Serang District Health Office

No.	Internal Factors		External Factors	
	S	W	O	T
1	HR Support	Lack of training	Cross- sectoral	Changing demographics
2	Policy	Distance between health facilities	Information technology	New types of infectious diseases
3	Technology	Lack of facilities and infrastructure	Budget support	Community behavior
4	Facilities	Budget	Cooperation with the private sector	Climate change
5	Health facility network	There are still remote health facilities	Similar or vertical agency support	Change in budget allocation

Discussion

Effectiveness of Epidemiological Surveillance Role Based on Aspects of Surveillance Role

Based on the above, it can be concluded that the role of epidemiological surveillance in monitoring infectious diseases and PD3I in Serang District is as early detection and rapid response to outbreaks. Based on the above, it can be concluded that in this case the respondents get the conclusion that what are the main challenges faced in the implementation of epidemiological surveillance, namely the busy activities of officers due to many activities due to their positions or main tasks. function overlap.

Based on the above, it can be concluded that in this case the respondents get the conclusion that how often data collection is carried out related to infectious diseases and PD3I, namely once a week, this is consistent between the Puskesmas and DHO respondents.

Effectiveness of Epidemiological Surveillance Roles Based on Aspects of Collection and Processing Processes

Based on the above, it can be concluded that in this case the respondents get the conclusion that the system for recording and reporting cases of infectious diseases and PD3I in Serang District, namely in this case the reporting system has been reported routinely in this case a report once a week is reported in order to describe cases in aggregate entered into SKDR, if there are case findings can be seen in SKDR.

Based on the above, it can be concluded that in this case the respondents get the conclusion that whether the data collected has been integrated with the national health information system, namely the data has been integrated with SKDR. Based on the above, it can be concluded that in this case the respondents get the conclusion that the quality and timeliness of reporting data on infectious disease cases and PD3I is 100 percent correct.

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Effectiveness of Epidemiological Surveillance Role Based on Follow-up and Aspects

Based on the above, it can be concluded that in this case the respondents get the conclusion that surveillance is used for early detection of disease and decision making in rapid response. Based on the above, it can be concluded that in this case the respondents came to the conclusion that surveillance is very effective in the early detection process. Based on the above, it can be concluded that in this case the respondents get the conclusion that the collaboration carried out includes cross-professional and cross-program.

SWOT

Based on the results of the SWOT analysis, it can be seen that the factors that can be identified in the epidemiological surveillance program are as follows:

Table 8. SWOT factors

Internal Factors Strength (S)		External Factors Opportunity (O)	
1	HR Support	1	Cross-sectoral
2	Policy Support	2	Information technology
3	Technology	3	Budget support
4	Facilities	4	Cooperation with the private sector
5	Health facility network	5	Similar or vertical agency support
Weakness (W)		Threat (T)	
1	Lack of training	1	Changing demographics
2	Distance between health facilities	2	New types of infectious diseases
3	Lack of facilities and infrastructure	3	Community behavior
4	Budget	4	Climate change
5	There are still remote health facilities	5	Change in budget allocation

Based on the above results, the SWOT matrix model below can be seen as follows:

Table 9 SWOT Matrix Model

Internal / External	Strengths-S	Weaknesses-W
	- HR Support - Policy Support - Technology - Facilities Health network	- Lack of training - Distance between health facilities - Lack of Facilities and infrastructure - Budget - There are still remote health facilities
Opportunities- O	SO strategy	WO Strategy
- Cross-sectoral	- Health department policies that support	- The need for ppropriate

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- Information technology - Budget support - Cooperation with the private sector - Similar or vertical agency support	- Increased use of information technology to expedite information - Coordination with stakeholders related to infectious diseases and PD3Is	technological innovation in the use of pplications - Need for regular training - Adding technology infrastructure such as computers, cellular phones
Threat - T	ST Strategy	WT Strategy
- Changing demographics - New types of infectious diseases - Community behavior - Climate change - Change in budget allocation	- Need for coordination with other related agencies - New disease information in order to quickly - Coordinate with the health promotion department	- Remote health facilities need to be coached regularly - Appropriate utilization of technology

Based on these results, it can be seen that the strategies carried out in the SO Strategy are supporting DHO policies, increasing the use of information technology to accelerate information, and coordination with stakeholders related to infectious diseases and PD3I. Then the WO Strategy is the need for appropriate technological innovation in the use of applications, the need for regular training, and adding technological infrastructure such as computers and cell phones. ST strategies are the need for coordination with other related agencies, new disease information to be fast, and coordination with the promkes section. And the WT strategy is that remote health facilities need to be fostered regularly and the appropriate use of technology.

CONCLUSION

From the results of existing research, the recommendations that can be given to pull the epidemiological surveillance policy at the Serang District Health Office are as follows: It is necessary to emphasize the policies of the Health Office that support in this case need to be reminded in meetings or briefings between surveillance program holders, namely the latest policies governing outbreaks if necessary can be strengthened by a circular letter of the Health Office. Then increase the use of information technology to speed up information and data in this case it is necessary to cooperate with Diskominfo so that the network bandwidth for facilities owned by the Regional Government so that the internet is fast. And coordination with stakeholders related to infectious diseases and PD3I, such as schools if

there is an outbreak in schools, villages, sub-districts, and BPDB if there is an outbreak within the scope of a disaster. Then the need for appropriate technological innovation in the use of applications in this case, namely the limited budget, the role of appropriate technology is needed so as not to depend on the government budget alone, such as the creation of computer networks in remote areas with a cheaper system. Then the need for regular training in this case can be carried out on the job training at the Health Office or Puskesmas whose surveillance program is already good. And adding technological infrastructure such as computers and cell phones in this case the Health Office needs to develop web-based applications and cell phones so that they can be used simply and easily the application. The need for coordination with other related agencies in this case is carried out so that the information network increases the sensitivity of the discovery of outbreaks at the lower levels below. Then disseminate new disease information so that it can be quickly through whatsapp groups, for example, or routine briefings via zoom meetings. And coordination with the promkes section, in this case the section plays a role in preventing outbreaks before they occur, besides increasing public awareness about outbreaks. And the WT Strategy is that remote health facilities need to be fostered regularly and appropriate use of technology.

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