Analysis of Epidemiological Surveillance Activity of the COVID-19 at Surabaya Airport Indonesia on January 2020

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Abstract

The Surabaya Port Health Office (PHO) Class I is tasked with the disease prevention by detection, response and protection at entrance gates for the sea and airports and over the state cross-border posts regarding the situation of COVID-19 pandemic. This analysis aimed to assess activities of early warning alert and response system to COVID-19 at Juanda International Airport on January 2020. The method used includes interviewing four informants, studying of documents and directing field-observation by following activities of PHO, who supervise, inspect General Declarations, distribute, and collect the Health Alert Card (HAC) and monitor body temperature of travelers. The analysis uses a system approach and 4M model with modification by adding time, technology and information variables. Activities in the early warning alert and response system of COVID-19 are in accordance with the Preparedness Guidelines by the Indonesian Goverment. The outputs of reported activities have been classified as appropriate. The HAC form is lacking as a source of COVID-19 surveillance, address information part is often being misinterpreted by travelers. It is necessary to add additional questions regarding the destination address of travelers, and to educate on how to fill HAC correctly so that the effectiveness of HAC can be maximized.

Keywords: airport, COVID-19, epidemiology, surveillance, screening

Introduction

In December 31, 2019, the World Health Organization (WHO) China Country Office reported a case of pneumonia of unknown etiology in Wuhan City, Hubei Province, China. In January 7, 2020, China identified this pneumonia as a new type of coronavirus (novel coronavirus, 2019-nCoV). In February 12, 2020, the WHO changed the disease name from 2019-nCoV to Coronavirus Disease 2019 (COVID-19).

The SARS-CoV-2 coronavirus is a new type of virus that has never been identified before in humans. Transmission of COVID-19 has been classified as inter-human transmission but is still limited to the patient's family, health care workers who treat patients, and those who have had close contact with confirmed cases. COVID-19 is less severe than SARS and MERS. However, a rapid increase in the number of people with COVID-19 disease and evidence of human-to-human transmission means that COVID-19 is more easily transmitted than SARS and MERS.[1]

Since it appeared in December 31, 2019 until the end of February 2020, the increasing number of cases of COVID-19 patients has been quite rapid and has spread both nationally and internationally. In January 30, 2020, WHO announced the Public Health Emergency of International Concern (PHEIC) status regarding COVID-19. PHEIC is declared when there is an outbreak of disease that is a public health risk, that can spread across countries and that potentially requires a coordinated international response.

COVID-19 has since spread to other countries in the world. As of March 2, 2020, WHO reported that there were 88,948 patients with confirmed cases of COVID-19. 80,174 of them came from the epicenter in China, and 8,774 people were spread over 64 other countries. Chinese deaths were put at 2,915, with a further 128 deaths outside of China; the crude fatality rate (CFR) was 3.4%.[2] Indonesia announced its cases of COVID-19 on March 2, 2020.

Indonesia has numerous entrances to the territory as the in and out access of risk factors for the spread of disease and health problems. Anticipating the threat of global disease, especially in terms of public health, is one of international concern. The International Health

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Regulations (IHR) of 2005 are the guideline for Indonesia to increase its capacity and capability in health surveillance and response and in health quarantine in the region and at the entrances at both ports, airports, and the State Cross-border Post.

Health Surveillance at the State Entrance is one of the responsibilities of the Port Health Office (PHO). The PHO has the task of carrying out prevention of entry and exit of diseases, potential outbreaks, epidemiological surveillance, quarantine, environmental health impact control, health services, drug, food, beverages, cosmetics, medical devices, and addictive substances control as well as averting new diseases and those that are reemerging, or linked to bioterrorism, biological, chemical, or radiation protection in the working area of airports, ports and national land borders.

One of the PHOs in Indonesia is PHO Class I in Surabaya, East Java, which has five working areas, namely Tanjung Perak Sea Port, Juanda Airport, Gresik Sea Port, Kalianget Sea Port and Tuban Sea Port. Epidemiological surveillance is conducted by the Surabaya Port Health Office Class I, and one of its routine surveillances is of transit via sea and air. The surveillance is carried out through supervising the traffic of people, goods, and transportation equipment.

Implementation of IHR (2005) at the state entrance is the responsibility of the PHO along with all agencies at the state entrance. In maintaining the state entrance, PHO implements surveillance in routine conditions and surveillance of events under certain conditions, such as the PHEIC declaration. Activities at the state entrance include efforts to detect, prevent, and respond to COVID-19 at ports, airports, and the State Cross-border Post. These efforts are carried out through the supervision of transportation equipment, people, goods, and the environment coming from regions and countries affected by COVID-19 and are carried out by PHO in coordination with related sectors. This study aimed to analyze the activities of early warning alert and response system to the PHEIC of COVID-19 at Juanda International Airport on January 2020.

Method

This study applied a descriptive evaluative research using an input-process-output (IPO) system approach to obtain in-depth information from data and sources about the activities that occurred. With the input subsystem, the 4M method (man, material, method, machine) is used with modification by adding time, technology, and information variables. It is a reliable, intermediate tool for problem analysis.[3]

Results

Analysis of COVID-19 early awareness activities

through monitoring the arrival of transport vehicles, people and goods in Surabaya PHO Class I was completed through a system approach (input, process, output). Here is the description of the subsystem:

1. Input

Those included in the input section are man, method, material, machine, time, technology, and information.

1) Man

Data collection in the early detection and alert system of COVID-19 at Juanda International Airport involved 24 Surabaya PHO Class I employees in the working area of the Airport. This consisted of a team in each work shift with a total of four people, involving a doctor, a nurse, an environmental risk management expert, and a quarantine control and epidemiological surveillance expert at the quarantine post at Terminal 2, which serves international arrivals. Due to increased awareness and efforts to prevent the entry of the COVID-19 virus by the arrival of people from abroad, there are additional staff and training in the implementation of activities with details as follows:

a. Adding a further three people from other health sec tors as Human Resources assistance.

b. Improving the quality of human resources by brief ing by the duty officer.

c. Briefing on the use of Personal Protective Equipment (PPE) and early detection devices for negative pres sure transport capsule (evacuation capsules).

2) Material

a. Health Alert Card (HAC)

Since the PHEIC status of COVID-19 was applied on January 2020, every crew or passenger coming from abroad will be given a Health Alert Card (HAC). The HAC is a form used as an information tool that contains the identity, travel history, and symptoms of a traveler. If during the incubation period of 14 days after traveling, the person experiences symptoms of COVID-19 disease and visits the health service and also brings their completed HAC, the health worker can see the history of traveling of the person and whether there is a probability of COVID-19 infection, thereby enabling risk communication, prevention, and alertness. The HAC used by Surabaya PHO Class I is a procurement from the Ministry of Health of the Republic of Indonesia. The new procurement per January 2020 was 94,500 pieces from funds from the Surabaya PHO Class I Budget Implementation List (*Dana Isian Pelaksanaan Anggaran* / DIPA) in 2020. This procurement amount has been adjusted to the estimated needs for a month based on the number of travelers arriving each month, which is approximately 90,000 people. This amount is sufficient to meet the needs of HAC distribution to all international arrivals at Juanda International Airport, Surabaya.

Based on appearance, HAC consists of one sheet of

yellow paper that includes two parts (Figure 1). The smaller part contains the identity that must be filled by the traveler, such as name, age, gender, address, telephone number, flight number, and seat number. Once filled, this piece will be collected to PHO officers for data entry and recapitulation, while the large part is given to travelers. The contents of the large part are the identities of the traveler that can be shown to health facilitator if there is manifestation of disease. On the back side of the personal data form contained brief information about the disease including COVID-19. The HAC form is written in two languages, Indonesian and English, making it easier for Indonesian citizens and foreigners to fill in.

b. Personal Protective Equipment

Personal protective equipment (PPE) is an officer safety tool needed for supervision of people and goods traffic in accordance with the Decree of the Minister of health of the Republic of Indonesia No. 425 of 2007 concerning Guidelines for the Implementation of Health Quarantine at the Port Health Office, and includes dress, N95 mask, and gloves. Based on interviews with program implementers, the availability of PPE on January has been sufficient, and in accordance with existing regulations, a minimum of 200 PPE is available.

c. Communication Tool

The tools used for communication on the field are smartphones and handy talky. For fast reporting, smartphones are more often used due to a wider range and fast message delivery. In dealing with the PHEIC COVID-19 condition, Surabaya PHO Class I coordinates with many cross-sectors. The WhatsApp group is used as a media for rapid information exchange such as sharing information, current updates and other purposes aimed at early warning alert activities towards COVID-19.

d. Communication, Information, Education Media

There are communication, information, and education media in the form of banners and leaflets. The media is located in front of the Terminal 2 quarantine room for international arrivals and next to the thermal scanner room located at the international arrival gate of Juanda International Airport, which contains information on symptoms, transmission, and prevention of COVID-19.

3) Method

Guidance procedures in early warning alert and response activities refer to the Preparedness Guidelines of 2019-nCoV (COVID-19) which consists of guidance 1 and revision 2 issued by the Indonesian Ministry of Health on January and February 20204. Activities at the entrance of the state include efforts to detect, prevent, and respond to COVID-19. These efforts are carried out through supervising the arrival of conveyances, people, goods, and the environment coming from regions and countries affected by COVID-19. This activity also refers to Law No. 6 of 2018 concerning Health Quarantine es-

Figure 1. Health Alert Card

pecially in Chapter IV on Health Quarantine at the Airport as the Entrance of the State.

COVID-19 surveillance in the field consists of checking aircraft conditions, checking aircraft crew health documents, and screening crew and passengers through thermal scanners and filling and summarizing of General Declaration (GENDEC) or aircraft health documents. If a traveler detected by the thermal scanner has a body temperature of more than 38°C, the device will sound as a warning. The traveler is given further inspection, risk communication, and a warning alert.

Based on the COVID-19 Preparedness Guidelines by the Indonesian Ministry of Health (revision-2), there are four terms that are used as operational definitions of COVID-19 infection cases, which are Person in Monitoring (PIM), Patient Under Supervision (PUS), probable cases and confirmed cases. Whereas the case definition by WHO consists of suspected cases, probable cases, and confirmed cases 5 (Tabel 1).

4) Machine

Surabaya PHO Class I has three thermal scanners from the supply in 2016 with condition two functioning and 1 broken as well as adding one thermal scanner was supplied in 2019. The supply of body thermal scanners is from the Indonesian Ministry of Health, sub. The Directorate General of Port Health Quarantine, and if there is damage and requires maintenance, it can only be fixed by central technicians, therefore it takes a long time to repair. The body thermal scanner functions as a temperature observation screening tool to detect the traveler's body temperature passes through the arrival gate. If person is detected with a body temperature of more than or equal to 38°C, the device will take pictures, show a red display and sound a warning.

The body thermal scanner is installed at the Terminal 1 and Terminal 2 arrival gates at Juanda International Airport. In addition to the body thermal scanner, the officers also use an infrared thermometer, to confirm the

Table 1. Operational Definition of Infection Case of COVID-19

Symptomp	Patient Under Supervision	Person in Monitoring	Probable Cases	Confirmed Cases
Fever/history of fever	V	V	V	V
Cough/runny nose/throat pain	V	V	V	V
Mild to severe pneumonia based on clinical symptoms and/or radiological features	V			
Risk Factors:				
Travel history to China or the affected region/country within 14 days before symptoms develop	V			V
History of exposure to one or more:				
• A history of close contact with COVID-19 confirmed cases				
• Work or visit health facilities associated with COVID-19 confirmed patients in China or in the affected region or country				
• History of contact with infectious animals (if identified)		V		
Have a fever ($\geq 38^oC$) or have a history of fever, have a history of travel to Wuhan or contact with those who have a history of travel to Wuhan (there are epidemiological links)			V	

temperature and double check the result. The machines and supporting equipment are stored in the Surabaya PHO Class I room at Juanda International Airport, which consists of a thermal scanner room, an interview room, a negative pressure observation room, and a negative pressure transport capsule or a temporary isolation room.

5) Time

Supervision of arrivals for early detection and response to COVID-19 takes place each day for 24 hours on international arrivals at Juanda International Airport, Surabaya. Data collection and data summarizing of aircraft health documents takes approximately five minutes both online and offline per flight arrival. Whereas data entry and summarizing of HACs takes one minute per HAC sheet. The estimated data entry and summarizing of HACs for one aircraft arrival is around one to two hours.

6) Technology

Coordination uses technology such as electronic tools and the internet through online groups, both internally and across sectors, while manual data summarization uses software that can be found on computers in general.

7) Information

Information regarding aircraft arrivals from abroad is obtained through notification from the airline by giving the GENDEC or aircraft health documents to Surabaya PHO Class I officer on duty. In addition, information is also obtained through the Flight Radar application, via smartphone. Information sourced from the HAC is the identity, health conditions, and travel history of the crew or passenger. The data is useful as a precautionary measure if the COVID-19 case is found among travelers. The whole process has been progressing well. The officer can prepare and carry out tasks in the field in every arrival from abroad on time.

2. Process

The stages and methods of implementation have been regulated in the Standard Operating Procedures for Air Traffic Control, in addition to the Preparedness Guidelines of COVID-19 issued by the Indonesian Ministry of Health.

1) Data Collection

Data collection by Surabaya PHO Class I officers in the context of early warning alert and response of COVID-19 was carried out by direct observation and supervision of the arrival of aircraft entering Indonesia through Juanda International Airport.

Passenger health is observed by checking body temperature through a thermal scanner by PHO's officer on duty, and checking the HAC completed by the traveler. The HAC is summarized to obtain early information on any COVID-19 infection. Flight arrival data collection is by collecting GENDEC data by the airline to the PHO's officer on duty and using the Flight Radar application. The GENDEC summary results consist of data: aircraft name, flight number, aircraft registration number, aircraft origin, total flight crew, total airplane passengers, total number of sick passengers, as well as body temperature screening results. The HAC summary consist of data on the identity of the travelers such as name, age, gender, address, flight, seat number, travel history and symptoms of the disease. PHO's officer on duty also observed the flight schedule by monitoring the Flight Radar application.

2) Data processing

PHO's officers use software that can be found on computers in general to process monitoring data on the arrival of conveyances, people, and goods. This software is a form created to enter, summarize, and process data from GENDEC and HAC.

3) Data Compilation

In the early alert activities of COVID-19 by KKP Class

1 Surabaya at Juanda International Airport, aircraft arrivals are grouped according to the area of origin of the arrivals based on a WHO's circular letter forwarded by the Ministry of Health about countries infected or endemic of an infectious disease.

However, there is no data regarding the area, region, or address after the arrival of passengers from an area or region affected by COVID-19 as there is no question column about this. There is an address column in the HAC form, but based on the results of the HAC summary, many passengers misunderstand the requirements and do not fill in the HAC correctly resulting in incomplete data. This results in difficulties in monitoring the risk of travelers spreading disease, since the incubation period of COVID-19 is 14 days. Therefore, it is a possibility that new disease cases could occur during this incubation period while the travelers have been in their respective destinations.

4) Data Presentation

Presentation of data on the analysis of COVID-19 early warning alert and response activities in the form of graphs, tables, images, and narratives. The examples of data presentation are below for aircraft arrivals (Figure 2) and crew and passenger arrivals (Figure 3).

On January 2020, there were 583 aircraft arrivals from abroad at Terminal 2 of Juanda International Airport. The country of origin with the highest number of landings during January 2020 is Malaysia with a total of 284 arrivals. There were eight flights from China originating from Haikou Airport, Hainan Province, 1,497.9 km from Wuhan City, Hubei Province, the epicenter region of COVID-19.

There were 4,773 crew members and 97,154 passengers in Terminal 2 of the International Arrival of Juanda International Airport on January 2020. The highest number of crew and passengers was from Singapore, with 1,720 crew members and 36,092 passengers.

On January 2020, it was recorded that two travelers who were identified with thermal scanners had a body temperature of $\geq$ 38°C. Both of them had fever, cough and runny nose symptoms. The flight origin country were Singapore and Saudi Arabia. However, these two people were not included in the COVID-19's PIM because they were not included in the PIM criteria.

5) Data Analysis and Interpretation

Data analysis is a simple analysis of risk factors by comparing findings with existing indicators. Data has been processed based on risk factors and are analyzed descriptively to ensure that conveyances, people and goods are in a healthy condition and not carrying disease from other countries. Whereas if there is a potential COVID-19 case found, a comparison is made with the criteria for PIM cases, PUS cases, probable cases and confirmation cases determined by the Ministry of Health.
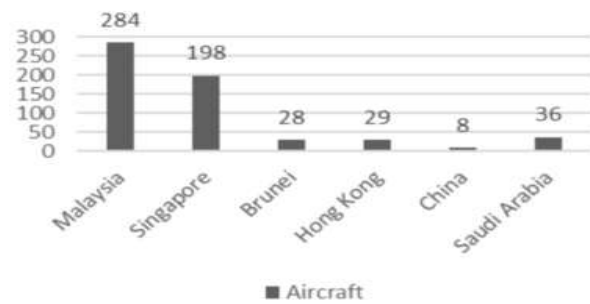

Figure 2. The Number of Aircraft Arriving from Abroad Based on the Country of Origin on January 2020
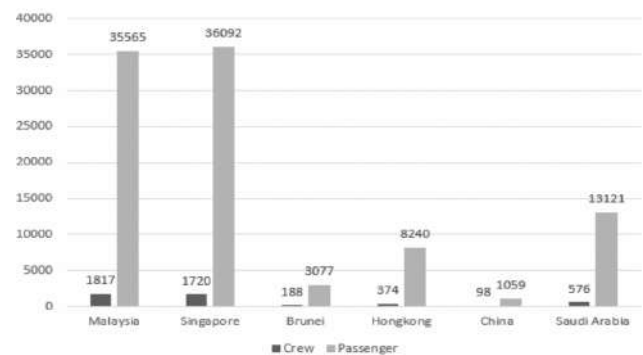

Figure 3. Number of Crew and Passengers Arriving from Abroad Based on the Country of Origin on January 2020

3. Output

The output results in three data sets:

1) Epidemiological Information

One of the outputs obtained is epidemiological information based on the results of daily reports and report of epidemiological investigations if a case of COVID-19 is found.

Daily reports from all COVID-19 early warning alert and response activities on aircraft arrivals from abroad are forwarded to the relevant sectors (Figure 5). These reports are likely to be the same as daily reports on normal condition, but also include the reporting of details about PPE stock and HAC stock every day.

2) Notification

One notification was issued on January 30, 2020, detailing 18 people who had just travelled from China, 12 from Hangzhou, two from Jinhua, one from Dongyang and three from Yiwu. Of the 18 people, 12 people were Indonesian students from China and six people were other passengers on flights that landed at Juanda International Airport.

Notification contains information about the name, age, gender, passport number, origin, destination, occupation, symptoms, and information of the traveler. The notification is useful as a warning to the Provincial Health Office and relevant agencies to conduct early warning

alert of COVID-19 in their respective regions.

3) Information Dissemination

Information dissemination is being held after the report or notification is complete. The daily report dissemination process is carried out by the officer on duty to their higher officer every day before 07:00 am on the following day via the WhatsApp application. Notification is given by the Surabaya PHO Class I to the Provincial Health Office and the others at PHO according to the original address of the PIO or POM, which is forwarded to the Directorate General of P2P, the Indonesian Ministry of Health. Quick report notifications are via WhatsApp, while official reports are delivered via email. Whereas if a COVID-19 case is found, the report will be submitted to the PHEIC of the Directorate General of P2P, the Indonesian Ministry of Health through an official report via email.

Problems found

The data format of HAC has only written "address", therefore many interpretations in the way of filling that part. A few passengers write their address abroad, instead of the destination address in Indonesia.

Discussion

1. Input

1) Man

The number of epidemiological surveillance officers at the Surabaya PHO Class I is sufficient and has received additional human resource assistance during the initial alert of COVID-19. The number of officers is in accordance with the standards in the Decree of Health Minister of the Republic of Indonesia Number 425/Menkes/SK/IV/2007.

Officers have also been given training and performance capacity building. However, the number of officers on duty is not sufficient compared to the number of passengers on one flight arrival, causing the communication of HAC checking methods to be less effective. This is shown by the results of the HAC summary that contained a large amount of blank spaces, data incorrectly filled in, or other matters relating to the passenger misunderstanding the form.

Whether or not an organization's goals are achieved is basically determined by the person carrying out the activity. Therefore, to balance this requires officers who are adept and trained in communicating directions for filling out the HAC. Proper training and development leads to condition of workers accomplish their task at full potential on their work.[6]

2) Material

The facilities and equipment available in the activities are largely sufficient for the implementation of early awareness activities for COVID-19. Facilities and equip-ment, especially PPE are the main supporting activities that are important as protection for officers in carrying out work. In order to prevent the transmission of disease in health services, PPE must be used consistently and in the right way by health workers to prevent exposure to pathogens that could cause infection.[7] The use of PPE reduces of disease transmission and protects health worker especially in COVID-19 treatment.[8]

3) Machine

Body thermal scanners function well as the main detection tool; however, if damaged, these require maintenance that can only be done by specialized technicians, which causes a long delay in repair. If this happens, it can disrupt surveillance activities at the airport. Machines as a means of supporting activities require care and maintenance so that their working functions are optimal. The thermal scanner can operate between 18 to 24 hours continuously. Hence, in operating thermographic device, health worker should be trained and the tool needs to be maintained to avoid any possibility of machine error.[9] With the maintenance and care of the machine, in this case the body thermal scanner, then the interference or damage to the tool can be minimized and avoided to enable continuous surveillance.

Body temperature screening using a body thermal scanner or other similar device such as infrared thermography has several limitations. For example, travelers who take anti-pyretic drugs to briefly modify body temperature can affect the scanning efficiency.[10] In addition, the scanner cannot detect symptoms if an infected person is still in the 14 days incubation period. Therefore, it is necessary to improve the detection accuracy and further develop the system, for example, by using multisensory detection of heart rate and breathing.[10]

4) Method

The method of implementing early detection, warning alert, and response of COVID-19 is in accordance with the Preparedness Guidelines of COVID-19 (revision-2). This activity is also in accordance with Law No. 6 of 2018 of the Republic of Indonesia concerning Health Outcome especially in chapter IV on Health Outreach at the Airport as the State Entrance.

5) Time

The activity continues 24 hours a day so that all arrivals from abroad can be monitored regularly. However, the summarizing of the HAC requires a longer time. While a large number of HACs are being completed, the guard must also continue to supervise, so this can result in an increased workload for officers. Excessive workload can cause work-related stress on workers.[11] This can affect the performance of traveler supervision by the officer on duty, so that job control is needed to enable an officer to specifically handle the HAC, while traffic surveillance activities continue to run optimally. Sufficient job control

does not pose major concerns on high workload.[12]

6) Technology

Internet and social media have been implemented to coordinate and disseminate information on activities to facilitate the data collection and administration of the COVID-19 vigilance system. The role of technology, especially in the field of communication today is very important due to the many demands for rapid and accurate information exchange.[13] Therefore, technology is very helpful in the early detection, warning alert, and response to COVID-19 by rapid reporting using information dissemination for both internal and cross-sectoral users.

7) Information

Aircraft arrivals from abroad can be monitored through Flight Radar and GENDEC collection. The traveler's data is obtained through the summarizing the HAC. The whole process has been progressed well, so that for every arrival from abroad at Juanda International Airport, the officer can prepare and carry out tasks in the field optimally. Data and information quality become an important requirement in making decisions for an organization so that it can achieve sustainable performance.[14] Information is only high quality if what is received by the recipient is in accordance with the intent of the sender.[15] The COVID-19 outbreak is a reminder of the need for constant surveillance and strong research to understand the basic biology of the new COVID-19 virus and also to develop effective treatments for this disease.[16] Therefore, high quality sources of information are critical in the implementation of COVID-19 surveillance, especially at the entrances to the country.

2. Process

Data collection through supervising of aircraft arrivals at Juanda International Airport is based on temperature observations and HAC to obtain information for an early alert to COVID-19 infection. In the summarizing process, this may take between one to two hours as the process must be carried out by many officers. This has been helped by the existence of additional officers from agencies outside the KKP Class I Surabaya.

In the data compilation, there was no data on the area, region, or address for passengers after their arrival in Indonesia from a region affected by COVID-19 as there was no question column for this in the HAC. Many foreigners give their original addresses in the country of origin instead of the destination place in Indonesia.

Overall, the process subsystem in the analysis of COVID-19 early vigilance activities at Juanda International Airport by KKP Class 1 Surabaya has been running in accordance with existing guidelines and SOPs. Processes and components must be aligned with the objectives of the surveillance system so that it can produce valid information, improve operational efficiency, and

not violate applicable regulations.[17] The important thing to do is to strengthen public health surveillance to provide early warning and to develop appropriate actions or responses, which are the main focus of public health.[18]

3. Output

The outputs of PHO activities are the effort to prevent disease at the entrance point of the country. This is particularly relevant when dealing with the status of PHEIC COVID-19 through administrative actions, as evidenced by daily reports, notifications to the Provincial Health Office, local PHO and other related sectors, and reports to PHEIC Directorate General of P2P of any potential cases. These three things have been implemented and have been forwarded to the relevant agencies. Reporting is done vertically to superiors and also horizontally to cross-sectoral agencies so that the results of the data from early vigilance activities can be utilized by sector programs or other agencies.

Alternative Troubleshooting

1. Add questions to the HAC form regarding the destination or area to be visited by passengers after landing at Terminal 2 of Juanda International Airport.
2. Add media examples of correctly completed HAC forms at the HAC post.
3. Advise guard officers to give instructions and warnings when distributing HAC forms, so that passengers fill the HAC correctly, honestly, and completely.

Conclusion

There was an increase in the vigilance of health surveillance in the Juanda International Airport by Surabaya PHO Class 1 regarding the COVID-19 entry to Indonesia. Problems and weaknesses were found in information sources such as HAC. There are no examples of travelers checking media such as the completed example forms in the HAC charging post. The results of HAC filling by the travel agents are still incomplete because some people do not understand the HAC form sufficiently.

The format of the HAC is still unclear regarding the destination area, region, or address for arriving passengers from an area or region affected by COVID-19. The address column on the HAC is still often misinterpreted as the original address, even though not all travelers will go directly back to the original address after landing at the airport. In addition, many foreigners still write the origin address from their respective countries. The HAC is a vital source of data to obtain high quality information for taking early precautions against COVID-19.

Activities in the early warning alert and response system of COVID-19 are in accordance with the Preparedness Guidelines established by the Indonesian

Ministry of Health. The outputs or activities both vertically and horizontally have been classified as appropriate. Reporting has been done routinely to the Directorate General of P2P and there is no delay. It is necessary to educate travelers about completing HAC forms through the addition of media, such as, a completed form as an example, and communication and direction from Surabaya Class I officers so that the effectiveness of HAC can be maximized.

Abbreviations

PHO: Port Health Office; HAC: Health Alert Card; WHO: World Health Organization; COVID-19: Coronavirus Disease 2019; PHEIC: Public Health Emergency of International Concern; CFR: Case Fatality Rate; IHR: International Health Regulation; IPO: Input Process Output; *DIPA: Dana Isian Pelaksanaan Anggaran*; PPE: Personal Protective Equipment; GENDEC: General Declaration; PIM: Person in Monitoring; PUS : Patient Under Supervision.

Ethics Approval and Consent to Participate

Not Applicable

Competing Interest

Author declares that there are no significant competing financial, professional, or personal interests that might have affected the performance or presentation of the work described in this manuscript.

Availability of Data and Materials

Data collected without constraints.

Authors' Contribution

Rizma Dwi Nastiti did the research, analyzes the data and writes the article. Kurnia Dwi Artanti gave supervision and monitores the research. Achmad Faridy Faqih gave supervision and monitors the study.

References

1. Yanping Zhang. The Epidemiological Characteristics of an Outbreak of 2019 Novel Coronavirus Diseases (COVID-19) — China, 2020. Web. 2020; 2 (8): 113–22.
2. World Health Organization. Coronavirus disease 2019; 2020
3. Knop K, Mielczarek K. Using 5W-1H and 4M methods to analyse and solve the problem with the visual inspection process – case study. MATEC Web of Conferences. 2018; 183 (5-6): 03006.
4. Kementerian Kesehatan Republik Indonesia. Pedoman Kesiapsiagaan Menghadapi Coronavirus Disease (COVID-19). 2020; 1–88.
5. World Health Organization. The first few X (FFX) cases and contact investigation protocol for 2019-novel coronavirus (2019-nCoV) infection, 2020.
6. Walters K, Rodriguez J. The importance of training and development in employee performance and evaluation. World Wide Journal of Multidisciplinary Research Development. 2017; 10 (3): 206–12.
7. Phan LT, Maita D, Mortiz DC, Weber R, Fritzen-Pedicini C, Bleasdale SC, et al. Personal protective equipment doffing practices of health-care workers. J Occup Environ Hyg. 2019; 16 (8): 575–81.
8. Cook TM. Personal protective equipment during the coronavirus disease (COVID) 2019 pandemic – a narrative review. Anaesthesia. 2020; 75 (7): 920-7.
9. Sathyamoorthy D, Yunus ARM. Thermographic mass blind fever screening: a review of the effectiveness of correlation tests and operations. Def S T Tech Bull. 2011; 4 (2): 105–18.
10. Sun G, Matsui T, Kirimoto T, Yao Y, Abe S. Applications of infrared thermography for noncontact and noninvasive mass screening of febrile international travelers at airport quarantine stations. In: Ng EY, Etehadtavakol M, editors. Springer Singapore. 2017; pp. 347–58.
11. HSE. Work-related stress, anxiety or depression statistics in Great Britain, 2019. Annual Statistic. 2019; 1–9.
12. Portoghese I, Galletta M, Coppola RC, Finco G, Campagna M. Burnout and workload among health care workers: the moderating role of job control. Safety and Health Work. 2014; 5 (3): 152–7.
13. Daeng ITM, Mewengkang NN, Kalesaran ER. Penggunaan smartphone dalam menunjang aktivitas perkuliahan oleh mahasiswa Fispol Unsrat Manado. E-Journal Acta Diurna Komunikasi. 2017; 6 (1): 1–15.
14. Alshikhi OA, Abdullah BM. Information quality: definitions, measurement, dimensions, and relationship with decision making. European Journal of Bussiness and Innovation Research. 2018; 6 (5): 36–42.
15. Azemi NA, Zaidi H, Hussin N. Information quality in organization for abetter decision-making. International Journal of Academic Research in Business and Social Sciences. 2017; 7 (12): 429–37.
16. Fauci AS, Lane HC, Redfield RR. Covid-19 - navigating the uncharted. New England Journal of Medicine. 2020; 382: 1268-9.
17. Groseclose SL, Buckeridge DL. Public health surveillance systems: recent advances in their use and evaluation. Annu Rev Public Health. 2017; 38 (1): 57–79.
18. Choi BCK. The past, present, and future of public health surveillance. Scientifica (Cairo). 2012; 2012: 875253.