



Proceeding of the 1st International Symposium of Public Health

"Emerging and Re-emerging Diseases"



Editors

Sri Sumarmi
Ika Yuni Widyawati
Trias Mahmudiono
Triska Susila Nindya
Maya Sari Dewi
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**S3 Ilmu Kesehatan
Fakultas Kesehatan Masyarakat
Universitas Airlangga**

Proceeding of the 1st International Symposium of Public Health, "Emerging and Re-emerging Diseases"
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WELCOME MESSAGE

Assalamu'alaikum warahmatullahi wabaraqatuh

I wish you all a warm welcome to Surabaya Indonesia.

It is a great pleasure for me to invite you in the 1st International Symposium of Public Health, held by Faculty of Public Health, Universitas Airlangga. This remarkable event is conducted by Doctorate and undergraduate program of Faculty of Public Health, Universitas Airlangga in collaboration with Airlangga Health Science Institute and Smart FM Surabaya. It's an honor to present "Emerging and Re-emerging Diseases" focusing on Zika virus as the main theme of our Symposium, as Zika being a new emerging disease in asia region.

The aim of this symposium is to disseminate the strategic planning of Indonesian Government, particularly the Ministry of Health, to prevent the transmission of Zika virus as well as the global and regional regulation. In relation to this matter, we invite Minister of Health as keynote speaker and also foreign expert: Professor Cordia Chu from Griffith University, Australia, but, unfortunately in this opportunity Professor Chu with a great regret can not come physically to Surabaya, due to a combination of critical family and urgent business. Instead, she likes to nominate Mr. Febi Dwirahmadi, SKM, MSc.PH, PhD to share the scientific knowledge about managing and Handling Zika in Community Setting. We also invite Dr. Pang Junxiong Vincent from National University of Singapore, who are going to discuss about the epidemiology of Zika, as well as Professor Nasronudin to present the role of Universitas Airlangga in research development.

The committee also invite the audience to submit abstracts in several sub themes in public health areas. We are expecting of two hundreds (200) participants, with at least ten percent (10%) coming from foreign countries and ninety percent (90%) from local participant coming from various region in Indonesia. There are a hundred and seven (107) abstracts were submitted, and then eighty nine (89) abstracts were accepted. From the accepted abstracts, there are fifty two (52) abstracts were accepted as oral presentation, and thirty seven (37) are presented as poster. This symposium was devided into two sessions, the plenary session and panel oral presentation. It is designed in such way, so that the delegates from various countryies or provinces, could share their local experience and best practices and discover ideas for strong regional initiatives.

At last, we would like to acknowledge for all parties which are provide the valuable materials as well as financial support for the successful symposium. As chair of organizing committee, I would also like to say deep thank you for all committees; my colleagues, and also students in faculty of Public Health Universitas Airlangga, who have been working to be part of a solid team and amazing committee.

To all of audience, thank you very much for your participation in this symposium, I hope you enjoy not only the symposium but also the sparkling city of Surabaya.

Wassalamu 'alaikum warahmatullahi wabaraqatuh

Sincerely,

Chair Person

Dr. Sri Sumarmi, SKM, M.Si



UNIVERSITAS AIRLANGGA

Rector's Official Address
in
INTERNATIONAL SYMPOSIUM OF PUBLIC HEALTH
"Emerging and Re-emerging Disease"
November 30, 2016

Assalamu 'alaikum wa-rahmatullahi wa-barakatuh.

May the peace, mercy and blessings of Allah be upon you.

Alhamdulillah! Praise be to Allah and along with this gratefulness let us also send *shalawat* and *salam* to our Prophet Muhammad SAW (Praise Be Upon Him): *Allaahumma shalli 'alaa Muhammad wa 'alaa aali Muhammad*. May Allah give mercy and blessings upon Him.

Ladies and Gentlemen,

The world always advances along with its challenges including in medical field. There are emerging diseases which have just occurred recently such as the one caused by Zika virus. There are also re-emerging diseases for the ones we assumed have been eradicated but they occurred again such as measles and polio.

Special for diseases related to Zika virus, some countries have declared a state of emergency. WHO even declared Zika virus transmission in South America as international public health emergency. Regarding the matter, for the global Zika virus epidemiology development, we regret to learn that information on Zika virus is limited such as on the risks, diagnosis, and the transmission method of the virus. In short, Zika virus has continued to spread and become a global precedence.

Therefore, this "INTERNATIONAL SYMPOSIUM OF PUBLIC HEALTH" is very welcomed and I appreciated the theme, "Emerging and Re-emerging Disease". I believe the communities, academic or general public will achieve benefits from the symposium results.

Ladies and Gentlemen,

Through this symposium, we are expected to get explanation and updates on measures to handle the "Emerging and Re-emerging Disease". The explanation is expected to give new insights for us to improve the quality of life as the demand to better quality of life, free from diseases, is even higher.



UNIVERSITAS AIRLANGGA

Hopefully, this event works as an effort to spread the knowledge and also functions as an input for the policy maker in medical field.

I would like to express my deepest gratitude to all participants, either domestic and from other countries, also to the committee and other parties who support this international symposium. I hope that our active participations can bring success to this seminar and they are regarded as act of kindness.

By saying grace: "*Bismillahirrahmanirrahim*", I officially open the "INTERNATIONAL SYMPOSIUM OF PUBLIC HEALTH" on "Emerging and Re-emerging Disease".

May this symposium be a success, run well and all the objectives achieved. Let us advance together to a better life in all aspects, especially in Public Health.

Have a great symposium and continue success!

Wassalamu'alaikum wa-rahmatullahi wa-barakatuh.

Rector of Universitas Airlangga,

Prof. Dr. Moh. Nasih, SE., MT., Ak., CMA.
NIP. 196508061992031002.

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EVALUATION OF PULMONARY TUBERCULOSIS SURVEILLANCE SYSTEM ATTRIBUTES IN LAMONGAN DISTRICT 2016

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ABSTRACT

One of the target diseases of epidemiological surveillance in Indonesia is Pulmonary Tuberculosis (TB). Based on the analysis of health problems that have been conducted in Lamongan District Health Office, Pulmonary TB is one of the top three priorities disease that needs preventive efforts.

This study was conducted in Lamongan District on May-July 2016. The primary data were collected from interviews and document study with the pulmonary TB officers in health centers in Lamongan. Secondary data such as pulmonary TB surveillance report were collected in Lamongan District Health Office. From a total of 33 public health centers (PHCs) in the working area of Lamongan District Health Office, 12 PHC were selected as sample by purposive sampling.

Half of pulmonary TB program officers in 12 health centers that were selected as sample has the highest education level as bachelor, 8 (66.7%) of them have been served for more than 5 years. However, only 7 (58.3%) of pulmonary TB program officers has attended training on pulmonary TB. There were 4 (33,3%) of pulmonary TB program officers said that the surveillance was hard to conduct and 6 (50,0%) of pulmonary TB program officers who did not have computer skills. Pulmonary TB surveillance was still done passively and there were delays in the reports collection. The evaluation of pulmonary TB surveillance system attribute in Lamongan reveals that there are problems on: simplicity, flexibility, sensitivity, timeliness, and stability.

Keywords: Attributes, Evaluation, Surveillance, Pulmonary Tuberculosis

INTRODUCTION

Based on Health Minister of Republic Indonesia Decree Number 1116/Menkes/ SK/VIII/2003, one of the target diseases of epidemiological surveillance Indonesia is Pulmonary TB. Pulmonary TB is a contagious infectious disease caused by *Mycobacterium tuberculosis*, which can attack various organs, especially lungs. Since 1993, the World Health Organization (WHO) states that pulmonary tuberculosis is a global

emergency for humanity. Until now, pulmonary TB is still a problem that gives a considerable burden on society. It is associated with variety of new challenges faced in controlling pulmonary TB such as pulmonary TB and HIV co-infection, drug-resistant pulmonary TB and other challenges with the higher level of complexity (Ministry of Health Republik Indonesia, 2011).

In 2014, WHO recorded 9.6 million people suffered from pulmonary TB and 1.5 million died. It is estimated 1 million

children suffer from pulmonary TB and 140,000 children die. Globally, there are approximately 480,000 people who experience anti-resistant against pulmonary TB drugs (OAT). India, Indonesia, and China are the three countries with the highest number of pulmonary TB cases (WHO, 2015).

Pulmonary TB control in Indonesia has been conducting since the Dutch colonial era, but it is still limited to a particular group. After the independence, pulmonary TB control has been carried out by the Center for Lung Disease Treatment (BP4). Since 1969, Pulmonary TB control conducted nationwide through health centres and in 1995, the strategy of Directly Observed Treatment, Short course chemotherapy (DOTS) was applied in pulmonary TB control programs in health centres gradually. In 2000, the DOTS strategy implemented nationally throughout health service facilities especially health centres that are integrated into primary health care. During 2011-2014, Pulmonary TB case detection rate in Indonesia that measured by Case Notification Rate (CNR) was stagnant, but in the same time period, the case finding drug-resistant pulmonary tuberculosis increased (MoH RI, 2015).

Based on health problems analysis that had been done in Lamongan District Health Office, Pulmonary TB was one of the top of three priorities disease that needs preventive efforts. The focus of the problem was the increasing number of drug resistant pulmonary TB cases in Lamongan district. It was necessary to evaluate the pulmonary TB surveillance system which has been implemented in Lamongan district.

MATERIAL & METHOD

This research is a descriptive evaluation of the pulmonary TB surveillance system attributes. The research was conducted in Lamongan

through May-July 2016. Data collected in the form of secondary data and primary data. Secondary data was TB surveillance report in Lamongan District Health Office, while the primary data was in the form of interviews and study the document to the officer holder pulmonary TB programs in PHC and deputy supervisor Pulmonary TB control program in Lamongan District Health Office.

As mentioned in Lamongan district health profile, Lamongan divided into 3 areas:

- 1) South Central, consisting of districts: Kedungpring, Babat, Sugio, Sukodadi, Pucuk, Sarirejo Kembangbahu, Tikung, and Lamongan.
- 2) North Central, consisting of districts: Sekaran, Maduran, Laren, Karanggeneng, Kalitengah, Turi, Karangbinangun, Glagah, and Deket.
- 3) North-South, consisting of districts: Mantup, Sambeng, Ngimbang, Bluluk, Sukorame, Modo, Brondong, Paciran, and Sulokuro.

From a total of 33 primary health centres (PHCs) in the working area of Lamongan District Health Office, 12 PHCs was chosen as sample by purposive sampling. From each region four PHCs were selected with selection criteria based on success rate below 100,0% as it revealed in Lamongan District Health Profile 2014. The selected PHCs were Moropelang (Babat subdistrict), Lamongan, Sukodadi, and Pucuk PHC for the South Central region; Sekaran, Turi, Glagah, and Deket PHC for the North Central region; Mantup, Ngimbang, Bluluk, and Modo PHC for the South-North. All the PHCs chosen as sample already have a laboratory for sputum examination for the patients.

RESULT

Overview of pulmonary TB Program Officer and Implementation of Pulmonary TB Surveillance in Lamongan

Pulmonary TB surveillance carried out by referring to the Ministry of Health Decree number 364/2009 regarding Guidelines for Tuberculosis Prevention and National Handbook of Tuberculosis Control from the Directorate General of Disease Control and Environmental Health, Ministry of Health Republic Indonesia. Sources of funds for Pulmonary TB surveillance activities derived from Health Operational Support from Ministry of Health Republic Indonesia. Since 2014, Integrated Information Systems Tuberculosis which is known as SITT has been implemented for Pulmonary TB surveillance in Lamongan district.

Based on the results of interviews with 12 pulmonary TB program officers in 12 PHCs located in the districts of Lamongan, obtained a description as follows:

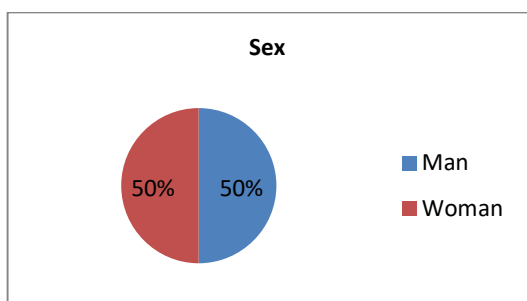


Figure 1. Distribution of Pulmonary TB Program Officer by Sex

In Figure 1, we can see that the ratio of men and women among pulmonary TB program officers in 12 PHCs in the research samples, was 1:1.

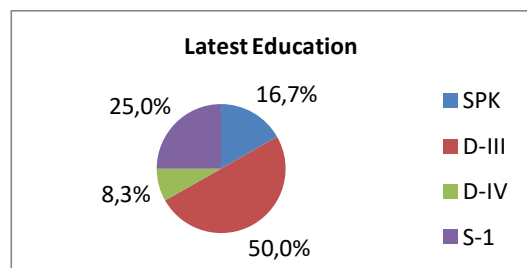


Figure 2. Distribution of Pulmonary TB Program Officer Based on Latest Education

In Figure 2 showed that 50% of the 12 pulmonary TB programs officers in 12 PHCs in the research samples had education level as bachelor. Figure 2 also showed that there were pulmonary TB program officers who still have education level of high school, as many as 2 people (16.7%).

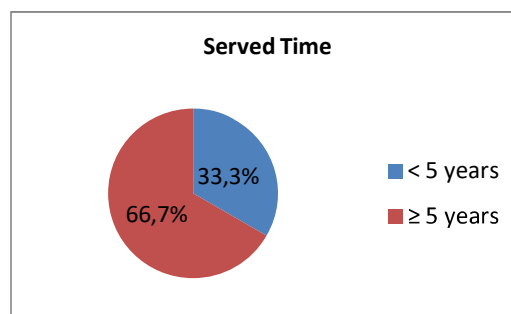


Figure 3. Distribution of Pulmonary TB Program Officer Based on Served Time

In Figure 3 it can be seen that the majority (66.7%) of the pulmonary TB program officers in 12 PHCs had served as the pulmonary TB program officers for more than 5 years. The shortest period was six months. Meanwhile, the longest was 30 years, which was the pulmonary TB program officer in Sukodadi PHC.

Based on the interview, all pulmonary TB program officers at PHCs have other duties besides pulmonary TB program (multiple workloads). Only 7 (58.3%) of 12 pulmonary TB program officers who had attended training on pulmonary TB.

In Figure 4 it can be seen that the reporting lines that is currently running has complex hierarchy that reduces its simplicity of pulmonary TB surveillance system. In addition, there are issues of cooperation between hospitals and private health centres. Based on the interview, the majority of pulmonary TB program officer holders cited difficulty convincing patients who had been diagnosed with pulmonary tuberculosis in hospital for sputum examination (smear).

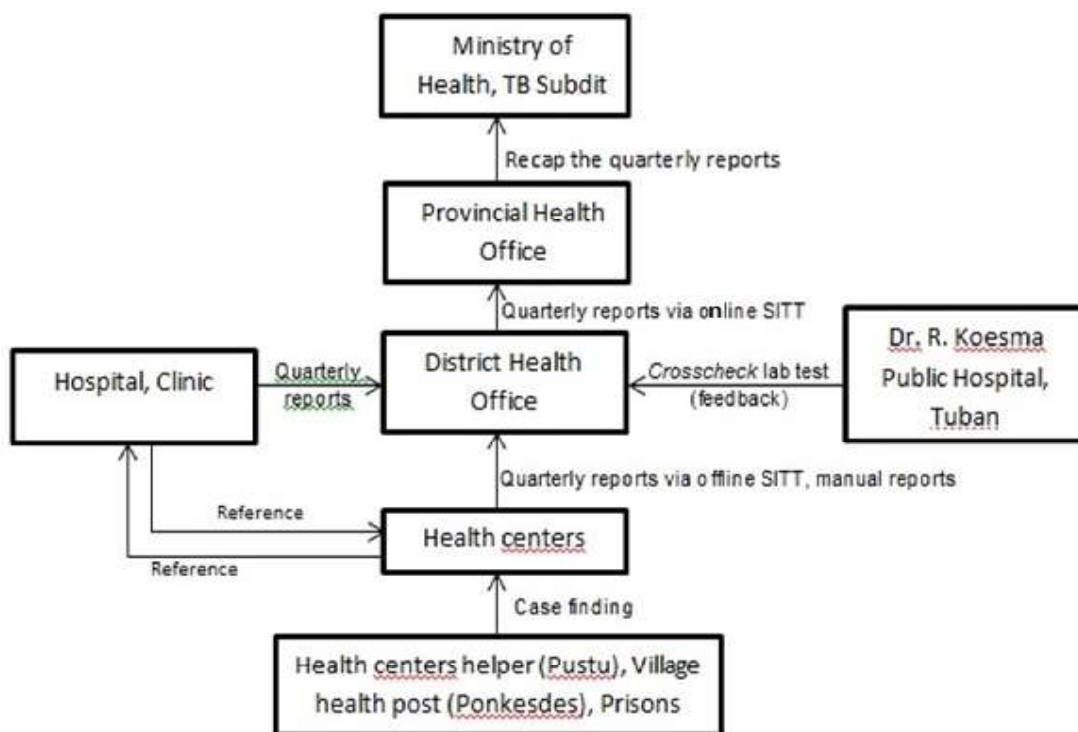


Figure 4. TB Surveillance system plot in Lamongan District

Evaluation of Pulmonary TB Surveillance System Attributes

1) Simplicity

Based on the interview, 66.7% of pulmonary TB program officers in 12 PHCs selected as sample stated that the surveillance system that currently running was simple. However, there were still 33.3% of TB program officers in PHCs stating that TB surveillance system currently running was complex. In addition, the reporting lines that currently running was still gradual. Based on that, the implementation of pulmonary TB surveillance system that runs currently considered as complex (not simple).

2) Flexibility

In 2014, pulmonary TB surveillance in Lamongan changed from manual system to computerized system which known as SITT. This change requires training for pulmonary TB program officers to be able to use SITT. In

addition, the device also needed a computer to run the software. Another change that occurs in pulmonary TB surveillance was the addition of the need for incorporate co-infection of pulmonary TB and HIV data, and also the changes upon diagnosis and follow-up of pulmonary TB patients. Based on this, Pulmonary TB surveillance system considered to be inflexible.

3) Acceptability

Based on interviews with pulmonary TB programs officers in 12 PHCs in Lamongan, obtained the information that there is no denial to conduct pulmonary TB surveillance from various stakeholders. Currently, the hospital has also implemented the DOTS strategy and reporting to the District Health Office. Based on this information, Pulmonary TB surveillance system considered has a high acceptability.

4) Sensitivity

Although the currently running surveillance system can portrays the problems of Pulmonary TB, but it was not able to monitor changes of the cases number over time rapidly to give an early alert. Based on interviews, it is known that the surveillance system that currently running tend to be passive, so that the surveillance system could not function optimally. Based on this, Pulmonary TB surveillance system is considered has low sensitivity.

5) Representativeness

The data collected by the pulmonary TB program officer will be entry to the SITT offline and sent via e-mail or brought directly to the supervisor every quarter of the year. Before supervisor reporting to the Provincial Health Office, the data will be validated so that the data collected by each pulmonary TB program officers in each PHCs reported correctly. Through the validation process, the data generated will be equally good at PHCs and at the District Health Office, so that the data are representative.

6) Timeliness

The timeliness of gathering reports from the PHCs to the District Health Office has not been calculated, and there were no attendance check so it could not be assessed. However, based on interviews with pulmonary TB program officer in the PHCs, there are 4 respondents (33.3%) who claimed there were cases of delays in reporting the data even though it is not often. Based on these, pulmonary TB surveillance system was considered not good in timeliness.

7) Stability

Although the majority of respondents expressed no interference to SITT, but there are 3 respondents who stated that they had experienced difficulties to re-entry of data on offline SITT. Even one of the respondents

claimed that he experienced data loss while doing entry data in SITT offline. Based on this, Pulmonary TB surveillance system was considered unstable.

8) Data Quality

Because it has been through the validation process, the data gathered through pulmonary TB surveillance system has good quality. Especially because the data has been stored in SITT, the data can be searched and displayed instantly.

DISCUSSION

In conducting the pulmonary TB surveillance, there were 13 forms that serve as an instrument for TB data collection, as follows:

1. TB-01 was TB patient treatment card filled out by TB officers.
2. TB-02 was the patient's identity card.
3. TB-03 was district TB registers.
4. TB-04 was a TB laboratory registers were filled out by the laboratory staff.
5. TB-05 was the application form for the TB laboratory sputum examination that filled by Polyclinics officers and then answered by the laboratory staff with the laboratory results.
6. TB-06 was list of suspects or suspected to be examined sputum and filled by officers in the clinics to capture suspected TB.
7. TB-07 was a quarterly report the discovery and treatment of TB patients.
8. TB-08 was the result of the quarterly report on TB treatment.
9. TB-09 was a referral form/move patients and filled by officers of TB.
10. TB-10 was the result of the final form of treatment of a TB patient referral/transfer.
11. TB-11 was a quarterly report the results of sputum conversion the final intensive phase.

12. TB-12 was a check form preparations to cross check and cross-count analysis of test results.

13. TB-13 contained a report OAT.

Some of the forms used for reporting and recording in the PHCs, hospitals, BP4, Clinics and Medical Practitioners Private, include TB-06, TB-05, TB-01, TB-02, TB-03, TB-09, TB-10 and TB-04. Special for Private Medical Practitioners, the use of TB recording and reporting forms customized for the required surveillance information available. Mean-while, the form used by the District / City Health Office in recording and reporting TB include TB-03, TB-07, TB-08, TB-11, TB-12, TB-13 (MoH RI, 2009).

Although all forms of TB are on the table, PHCs officers other than TB officers were not involved actively to record and report, so many forms are not filled completely. The completed form was limited to TB-01 which was near-perfection (Nizar, 2010). Some-thing similar was found in the evaluation of pulmonary TB surveillance system in Lamongan on the 12 PHCs as sample. When interviewed officers admitted that it quite difficult because of the large number of forms that must be filled, in addition to the color of TB-02 form also pose difficulties for readings.

Trace back at Figure 2 and Figure 3, it can be seen that some of pulmonary TB programs officers in PHCs still have the latest education on high school level and more than most (66.7%) officer have been served as Pulmonary TB program officers for ≥ 5 years. On this evaluation progress, researchers found five officers who are less skilled in using computers so as to fill SITT need the help of others. Some of them assisted by colleagues in PHCs who have computer skills, but there were also some who were relying on friends from outside the PHCs and also their own children to fill SITT offline that will be sent via e-mail to the District Health Office every three months. In addition,

there was still one PHC that does not have a device (laptop/computer) specifically for running the application SITT so the officers used his personal devices.

The addition of the information required in surveillance of pulmonary TB such as pulmonary TB and HIV co-infection increased the workload of pulmonary TB program officer as attachment of a negative stigma about HIV in Lamongan society is still high.

Other problem in implementation of pulmonary TB surveillance in Lamongan was related to the funding needs. Funds used for active surveillance in the discovery of suspected pulmonary TB is limited from funds from the Ministry of Health which was aimed at preventive activities health problems (East Java Communications Office, 2010). However, because these funds are not specifically aimed at overcoming the problem of pulmonary TB, lack of funds was mainly due to reach remote areas needed extra time and energy. Meanwhile, of the holders of pulmonary TB program also experienced problems for the implementation of active surveillance because of the multiple workloads. Limitation of time was the main constraint.

CONCLUSION

1. Of the 12 PHCs were selected as sample, 50% of pulmonary TB program officer has the highest education level S1.
2. Of the 12 PHCs in the research samples, 8 (66.7%) of pulmonary TB program officer had served as the pulmonary TB program officers for ≥ 5 years. However, only 7 people (58.3%) of pulmonary TB program holders who had attended training on pulmonary TB.
3. Evaluation of pulmonary TB surveillance system in Lamongan found problems on the attributes:

simplicity, flexibility, sensitivity, timeliness, and stability.

SUGGESTION

- 1) Attendance check should be made so that the timeliness can be assessed of each PHC.
- 2) Training for health officers, especially pulmonary TB program officers, so the forms could be filled completely.
- 3) Keep advocacy to local governments for special fund for Pulmonary TB surveillance, especially considering the fact that TB cases keep increasing annually in Lamongan district.
- 4) Coordination between hospitals and PHCs should be improved in pulmonary TB patient referral system.
- 5) A standard questionnaire for the evaluation of pulmonary TB surveillance system should be set so it can be used by other researchers.

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