The Implementation of Acute Respiratory Infection (ARI) Controlling Programme and The Coverage of Pneumonia Findings among Under-Five Children

Maulidya Puji Aryani[1], Ni'mal Baroya[2] ✉, , and Yunus Ariyanto[3]

Epidemiology and Population Biostatistics Division, Faculty of Public Health, Universitas Jember, Indonesia.

Info Artikel

Abstract

Pneumonia is an acute infection of lung tissue (alveoli). Pneumonia is one of the main focus ARI preventing and controlling program. One of the ARI preventing and controlling program indicators was pneumonia coverage among under five years old. The coverage of pneumonia finding among under five years old in Banyuwangi Regency since 2014-2016 years have not reached the national target. Pneumonia coverage of under-five chilldren in 2014 and 2015 shows 33,7% and 71,1%, while in 2016 shows 41,99%. This research aims to analyze the association between officer characteristics, logistics availability and ARI control activities with pneumonia coverage of under-five chilldren in Banyuwangi Regency. The research uses cross sectional analytic desain with 31 respondents. The result of this research has significant relationship is age, work length and capacity buailding. Nevertheless, gender, education, knowladge, availability of diagnostic tools, guideline, Information and Education Communication (IEC) media, recording and reporting media, advocation and socialisation, pneumonia find and management, supervision, recording and reporting, partnership and network, monitoring and evaluation has not significant relationship. Banyuwangi Health Office is hoped to do conduct periodic training every year to ARI program officer on ARI control management, management and promotion of pneumonia control in under-fives to increase human resources capacity in primary health facility.

Abstrak

Pneumonia merupakan salah satu fokus utama Program Pencegahan dan Pengendalian ISPA. Salah satu indikator program P2 ISPA adalah cakupan penemuan pneumonia balita. Cakupan pneumonia padabalita di Kabupaten Banyuwangi dari tahun 2014-2016 belum mencapai target nasional. Padatahun 2014 dan 2015 cakupan pneumonia pada balita sebesar 33,7% dan 71,1% sedangkan tahun 2016 sebesar 41,99%. Penelitian ini bertujuan menganalisis hubungan antara karakteristik petugas, ketersediaan logistik dan kegiatan pengendalian ISPA dengan cakupan penemuan pneumonia pada balita di Kabupaten Banyuwangi. Desain penelitian yang digunakan adalah analitik cross sectional dengan jumlah sampel 31 responden. Hasil penelitian ini yang memiliki hubungan signifikan dengan cakupan penemuan pneumonia pada balita adalah usia, lama kerja dan peningkatan kapasitas SDM dengan cakupanpenemuan pneumonia pada balita. Sedangkan jenis kelamin, pendidikan, pengetahuan, ketersediaan alat diagnostik, buku pedoman, media KIE, media pencatatan dan pelaporan, advokasi dan sosialisasi, penemuan dan tatalaksana pneumonia, supervisi, pencatatan dan pelaporan, kemitraan dan jejaring serta monitoring dan evaluasi tidak memiliki hubungan. Dinas Kesehatan Kabupaten Banyuwangi diharapkan dapat melaksanakan pelatihan secara berkala setiap tahun kepada pemegang program P2 ISPA mengenai manajemen pengendalian ISPA, tatalaksana pneumonia pada balita serta promosi pengendalian pneumonia pada balita untuk meningkatkan kapasitas sumber daya manusia yang telah tersedia di puskesmas.

✉ Coresspondence Address:
Jalan Kalimantan 37, Kampus Tegal Boto, Jember (68121)
E-mail: nbaroya@unej.ac.id

INTRODUCTION

Pneumonia is an acute infection of the lung tissue (alveoli). Pneumonia kills 19% more than other diseases in all deaths under five years and has a dominant number in each country. The rate of pneumonia findings in under-five children in Indonesia from 2007 to 2012 did not experience significant development. The increase is only between 23% -27.71%. Period prevalence of under five years who suffer pneumonia in Indonesia is 18.5/1000 while in East Java 15.8/1000 (Ministry of Health, 2013).

Banyuwangi Regency had not fulfilled the national target in the last 5 years, 2012-2016. Based on the annual report of the prevention and control of infectious diseases in Banyuwangi regency in 2012-2016, the coverage of pneumonia incidence in infants in 2012 amounted to 2,067 (17.27%), in 2013 of 3,897 (31.48%), (33.7%),in 2015 of 3,708 (71.1%) and in 2016 of 2,989 (41.99%). According to the annual report of the ARI Controlling Program in 2016 of Banyuwangi District Health Office, there were only 9 (20%) Health Centers from 45 Health Centers in Banyuwangi Regency that reached 70% target, the remaining 36 (80%) Health Centers still not reach the target of pneumonia findings.

The low coverage rate of pneumonia findings in under-five children according to the ARI control manual is due to sources of routine reports mainly from Health Centers, only a few provinces and regencies/cities which include hospitals and other healthcare facilities. In addition, case detection on Health Center is still low as most of the personnel have not been trained. The low compliance of reporting, especially in reporting from regencies/cities to provinces is also the cause (East Java Health Office, 2014). The coverage of pneumonia findings illustrates the performance of the ARI Controlling Program in the work area, especially in the case of pneumonia findings in under-fives, so that operational policy and strategy to achieve pneumonia control objectives is required. The strategy in controlling pneumonia of under-five children is performed through efforts to improve the principal activities of ARI control.

Implementation of ARI control strategy can be influenced by the performance of ARI program officer who has the duty to conduct a counseling about ARI, early findings of ARI patient, complete patient treatment, and case recording and reporting (East Java Health Office, 2014). If the management and governance of pneumonia cases are carried out in accordance with the ARI control manual, the control of pneumonia in a work area can run maximally so that the coverage of pneumonia findings on under-five children can reach the national target set by the Ministry of Health of the Republic of Indonesia.

The holder of the ARI Controlling Program is expected to perform pneumonia findings in the under-five children as well as actively report full-fledged case findings. Training of program holder on ARI management and governance of pneumonia is important to run the ARI Controlling Program well. Based on the background of existing problems, this purpose of this study was to analyze the correlation between officer characteristics, availability of logistics and ARI control activities with coverage of pneumonia findings in the under-five children in Banyuwangi Regency.

METHODS

This research was conducted in Banyuwangi Regency precisely in 31 health centers of Banyuwangi Regency. Based on the annual report of Infectious Disease Prevention and Infectious Disease Control of Banyuwangi District Health Office, from 45 Health Centers, only 9 health centers reached national targets. Meanwhile, 36 other Health Centers were still below the national target. This study was an observational analytic study by analyzing the correlation between independent variables which include characteristics of officers (age, sex, length of work, education and knowledge), availability of logistics (availability of diagnostic tools, manuals, Information and Education Communication (IEC) media and recording and reporting media), as well as ARI control (advocacy and socialization, findings and management, supervision, recording and reporting, partnership and networking, capacity building of human resources, and monitoring and evaluation) on dependent variable that is coverage of pneumonia findings in under five children. This research used cross-sectional approach design with simple random sampling technique. The data collected in this research were primary and secondary data. Primary data was conducted by direct interview with ARI Controlling Program holder in Health Center on officer characteristic and ARI control activity by using a questionnaire to observe directly on logistic availability and recording and reporting at Health Center. While the secondary data obtained through the data documentation of pneumonia findings coverage in under-five children.

RESULTS AND DISCUSSION

Correlation Between Characteristics of Officers and Coverage of Pneumonia Findings in Under-Five Children in Banyuwangi Regency 2017

The results of the bivariable analysis were

Table1 Correlation between Characteristics of Officers and Coverage of Pneumonia Findings in Under-Five Children in Banyuwangi Regency 2017.

Variable	Not Achieve The Target		Achieve The Target		p-value	OR	Cl 95%
	n	%	n	%			
Age							
< 40 years old	21	67.7	3	9.7	0.029*	9.3	1.36-63.96
≥ 40 years old	3	9.7	4	12.9			
Sex							
Male	11	35.5	1	3.2	0.201	5.1	0.53-48.86
Female	13	41.9	6	19.4			
Length of work							
≤ 10 years	23	74.2	3	49.7	0.005*	30.7	2.52-373.55
>10 years	1	3.2	4	12.9			
Education							
Health	2	6.4	3	9.7	0.062	0.1	0.02-0.97
Non-Health	22	71	4	12.9			
Knowledge							
Bad	14	45.2	1	3.2	0.083	8.4	0.87-81.08
Good	10	32.2	6	19.4			

Information* = significant (*p-value* <0.05)

found that there was a significant correlation between the characteristics of ARI Controlling Program holders which include age (p = 0.029) and length of work (p = 0.005), and coverage of pneumonia findings in under-five children in Banyuwangi Regency on 2017 with p-value was less than 0.05. While there was no significant relation between sex (p = 0.201), education (p = 0.062) and knowledge (p = 0.083) with coverage of pneumonia findings in under-five children in Banyuwangi Regency. Due to the p-value value was more than 0.05. Length of work is viewed from how long the respondent holds the ARI Controlling Program. The length of work of ARI Controlling Program holders who hold ≤10 years have a 30.7 times greater risk of not achieving national targets than officers who hold > 10 years the ARI program. Based on table 1, 31 respondents of ARI Controlling Program in Banyuwangi Regency were mostly <40 years old, female, have ≤10 years length of work and even some health centers have holders of ARI Controlling Program with <1-year length of work. The average holders of the ARI Controlling Program were > 40 years old, holding the ARI Controlling Program more than 10 years. Health educational background and have a lack of knowledge about pneumonia in under-five children. Knowledge of pneumonia in under-five children was measured using an inspection questionnaire with 10 questions relating to pneumonia in under-five children who should be known by program holders.

The increasing age will increase the wisdom and ability of a person to make decisions, think rationally, control emotions, and tolerate the views of others, thus will affect the improvement of performance (Kujamas, 2014). In this study, there was no significant relationship between the sex of respondents and coverage of pneumonia findings in under-five children.

Based on the results of the study showed that there was a significant correlation between the length of work of officers and coverage of pneumonia findings in under-five children in Banyuwangi Regency. This study is in line with research conducted by Marlinawati which showed that health center that failed in achieving national targets have holders of ARI Controlling Program and IMCI that have been working for 1-2 years, so that they are relatively new and not have experience and wide insight in doing the job (Marlinawati, 2015). The results of this study supported Prabawa research (2017) which stated that there is a correlation between the length of work and the practice of pneumonia findings in under-five children.

Education affects a person in the work as a holder of the ARI Controlling Program. Officers with non-educational backgrounds will find it difficult to carry out case management and case finding as well as mastery of pneumonia control materials. This research is in line with the research conducted by Dharoh et al. which showed that there is no correlation between the education of the officer and

the coverage of pneumonia findings in under-five children (Putriarti, 2015).

This study found out that the knowledge of ARI Controlling Program holder is less about pneumonia in under-five children one of the causes is the lack of information received by the holders of the ARI Controlling Program on pneumonia in under-five children. This research is in line with the research of Arini (2014) which stated that there is no relationship between sex of respondents and the practice of flick findings.

Correlation Between Availability of Logistics and Coverage of Pneumonia Findings in Under-Five Children in Banyuwangi Regency 2017

The results of bivariable analysis in this study were that there was no significant correlation between the availability of diagnostic tools (p = 0.083), availability of manual (p = 0,384), availability of IEC media (p = 1,000) and availability of recording and reporting media (p = 0,642) with coverage of pneumonia findings in under-five children in Banyuwangi Regency because p-value was more than 0.05. Statistically, the availability of logistics has no significant correlation with coverage of pneumonia findings in under-five children. Health Centers that had not reached national targets had the most diagnostic tools with an amount that is not in accordance with the guidebook. The availability of diagnostic tools is important in the case of pneumonia finding to calculate the patient's breathing. The availability of an ARI Sound Timer diagnostic tool with an amount which is not in accordance with the guidebook is at 8.4 times greater risk of not achieving coverage of pneumonia findings. Based on table 2, it is known that most health centers in Banyuwangi Regency had incomplete manuals, had IEC media, as well as complete recording and reporting media. The ARI Controlling Program holder manual is said to be complete if it has an ARI control management handbook as well as the management of pneumonia in under-five children. IEC media which is widely used by the health center, in the form of posters or leaflets about pneumonia in under-five children. Completeness of recording and reporting media is seen from the availability of all recording and reporting media such as ARI stamp, daily register, and monthly reporting form. A total of 16% of respondents did not use the ARI stamp because the direct diagnostic records were written on the patient's record.

ARI sound timer is a breath counting tool to measure the rate of breathing in under-five children so that it can diagnose the under-five children into the category of cough but not pneumonia, pneumonia, and severe pneumonia. The availability of

ARI Sound timer in accordance with the guidebook has a minimum of 3 pieces in each Health Center, 1 in *Pustu* (*Puskesmas Pembantu* = Health-Center Auxiliary) and 1 in each village midwife, *Poskesdes* (*Pos Kesehatan Desa* = Village Health Post), *Polindes* (*Pondok Bersalin Desa* = Village Maternity Lodge), and *Ponkesdes* (*Pondok Kesehatan Desa* = Village Health Lodge). With the correct diagnosis, it will be appropriate to take further treatment action. For health centers that use watches in breath counts, will have less accurate results and sometimes incorrect in diagnosis that includes into coughs but not pneumonia, pneumonia, and even severe pneumonia. If there is misdiagnosis and incorrect as well as improper of treatment will result in death. The research of Choiriyah (2015) also found that the use of ARI sound timer at the new Health Center will be replaced if the tool has been used for 3 years or has been damaged.

Manual is a standard regulation of services and policies that exist in a program and as a guidance in running the program. Based on this study, it was found that there was no significant correlation between the availability of manuals with coverage of pneumonia findings in Banyuwangi Regency. The manual is used as a reference for program implementation and management of pneumonia. According to research conducted by Putriarti et.al (2015) found out that although the manual already exists, the officers at the health center still do not understand what is contained in the guidebook. This is because officers are not given further explanation of the contents of the manual. With the lack of understanding of the officers on the manual, the application of the things in the manual is less maximum.

The IEC media contains information about pneumonia in under-five children. The information that is made as simple as possible and easy to understand by ordinary people. So that IEC media can be used as a means of education that connect between Health Center and community. IEC media is usually equipped with interesting and easy to understand images, it is very beneficial for people who can not read. According to research conducted by Dharoh, that there are still many officers of ARI Controlling Program who have less knowledge that may be due to other factors that support to realize good behavior in this case such as lack of Information and Education Communication (IEC) to the officer of ARI Controlling Program, so this can be one of the lack of target achievement on pneumonia findings in under-five children in Semarang City (Dharoh, 2014).

Recording and reporting media are used to record and report the pneumonia findings based on age and type of pneumonia which is experienced by

Table2 Correlation Between Availability of Logistics and Coverage of Pneumonia Findings in Under-Five Children in Banyuwangi Regency 2017.

Variable	Not Achieve The Target		Achieve The Target		p-value	OR	Cl 95%
	n	%	n	%			
ARI Sound Timer Diagnostic Tool							
Available with amount not in accordance with the manual	14	45.2	1	3.2			
Available with amount in accordance with the manual	10	32.2	6	19.4	0.083	8.4	0.87-81.08
Manual							
Incomplete	16	51.6	3	9.7	0.384	2.7	0.48-14.90
Complete	8	25.8	4	12,9			
IEC media							
Not Available	9	29.1	3	6.4	1.000	1.5	0.24-9.41
Available	15	48.4	4	16.1			
Recording and Reporting Media							
Incomplete	7	22.6	1	3.2	0.642	2.5	0.25-24.46
Complete	17	54.8	6	19.4			

Information* = significant (*p-value*<0.05)

each Health Center from its working area and reported directly to the Health Office. Based on this research showed that there was no significant correlation between the availability of recording and reporting media and coverage of pneumonia in under-five children in Banyuwangi Regency. Based on observations in Health Centers that did not have complete reporting media, on average, they did not use the ARI stamp. This is in line with research conducted by Marlinawati that all Health Centers who achieve national targets have ARI stamps, but there is no stamp on Health Center that fails to achieve national targets (Marlinawati, 2015).

Correlation BetweenARI control and Coverage of Pneumonia Findings in Under-Five Children in Banyuwangi Regency 2017

Based on the results of bivariable analysis, it can be seen that there was a significant correlation between the increase of human resource capacity (p = 0.028) and coverage of pneumonia findings in under-five children in Banyuwangi Regency because it had p-value less than 0.05. While there was no significant relationship between advocacy (p = 0.667) and socialization (p = 1.000), findings and management (p = 0,053), supervision (0,562), recording and reporting (0,550), partnership and network (p = 0.083) and monitoring (p = 1.000) and evaluation (p = 1.000) with coverage of pneumonia findings in under-five children in Banyuwangi Regency. Based on table 3, most health centers in Banyuwangi Regency have conducted advocacy and socialization, find and manage pneumonia passively, get supervision from health office, have complete recording and

reporting, have partnership and networking, never follow human resource capacity improvement, monitoring by the health service is performed not every month as well as evaluation. Advocacy activitiy is conducted through internal and external mini-locals. One form of socialization conducted by the holders of the ARI Controlling Program is public education through *Posyandu* (*Pos Pelayanan Terpadu* = Integrated Service Post). Passive findings of pneumonia in under-five children has a risk of 6.7 times greater than coverage of pneumonia findings in under-five children which have not achieved national target than active findings. Although the statistics of supervision activities do not have a significant correlation, the Banyuwangi Regency Health Office has been well supervised. The holders of ARI Controlling Program who have never been supervised are officers with a working period of <1 year.

Monthly report submission to program holders in Regency is done monthly, but some Health Centers are not on time in reporting. Human resource capacity building is conducted through training on management and governance of pneumonia in under-five children. Most of the respondents who had attended the training that held outside Banyuwangi Regency. Monitoring activity is conducted every month by program holders in Regency on coverage of pneumonia findings in under-five children. However, only 29.03% of respondents routinely perform monthly reporting and others are merged after several months. While the evaluation is performed by the holders of ARI Controlling Program in the form of data validation every 6 months. Holder of Health Center program who never follow

Table 3 Correlation Between ARI control and Coverage of Pneumonia Findings in Under-Five Children in Banyuwangi Regency 2017

Variable	Not Achieve The Target		Achieve The Target		p-value	OR	Cl 95%
	n	%	n	%			
Advocacy							
Never	11	35.5	2	6.4	0.667	2.1	0.34-13.13
Ever	13	42	5	16.1			
Socialization							
Never	4	12.9	1	3.2	1.000	1.2	0.11-12.88
Ever	20	64.5	6	19.4			
Management and Governance							
Passively	20	64.5	3	9.7	0.053	6.7	1.06-42.06
Actively	4	12.9	4	12.9			
Supervision							
Never	5	16.2	0	0	0.562	-	-
Ever	19	61.2	7	22.6			
Recording and Reporting							
Incomplete	2	6.4	1	3.2	0.550	0.5	0.04-7.09
Complete	22	71	6	19.4			
Partnership and Networking							
Not available	14	45.2	1	3.2	0.083	8.4	0.87-81.08
Available	10	32.2	6	19.4			
HR capacity increasing							
Never	23	74.2	1	12.9	0.028*	17.3	1.42-210.12
Ever	1	3.2	6	9.7			
Monitoring							
Not every month	17	54.9	5	16.1	1.000	1	0.151-6.247
Every month	7	22.6	2	6.4			
Evaluation							
Never	5	16.1	1	3.2	1.000	1.6	0.15-16.31
Ever	19	61.3	6	19.4			

Information* = significant ($p\text{-}value < 0.05$)

the evaluation due to less than 1-year length of work.

ARI Controlling Program advocacy on activities, policies, and strategies in running ARI programs become the better. Advocacy is performed by discussing together and solving existing problems to be taken together. One form of socialization is performed in the form of counseling. Counseling activity in Health Center work area is performed by program holder that cooperate with cadre and village midwife to do counseling during *Posyandu*. Pneumonia counselling materials in under-five children give more understanding to mothers how the symptoms of pneumonia in under-five children to be detected early and immediately get the treatment.

Statistically, this study found that there was no significant relationship between the findings and management of pneumonia with coverage of pneumonia findings in under-five children in Banyuwangi Regency. Health Centers that do not reach targets are mostly done passively. The handling of pneumonia cases is performed by using IMCI (Integrated Management of Childhood Illness) [*MTBS (Ma-*

najemen Terpadu Balita Sakit)]. Pneumonia is one of the diseases which is handled in the program. This is in line with the research of Arifeen which found that the implementation of the IMCI strategy has helped to accelerate the decline in mortality on respiratory diseases and to reinforce the benefits addressed by the ARI management strategy in terms of improving the quality of health care for children with respiratory diseases, both at home and in health services (Arifeen, 2009).

Supervision is carried out by the provincial and district health offices. Things that supervised by the district health office to the Health Center are the basic data Health Center, management and governance, and availability of logistics. Recording and reporting is used to determine the number of under-five children with pneumonia. Statistically, this study found that there was no significant relationship between recording and reporting with coverage of pneumonia findings in under-five children in Banyuwangi Regency. However, most Health Centers already have complete recording and reporting. The

reporting of program must meet several requirements of which must be compiled completely with the format that already specified, then, it must be factual and reported on time (Putriarti, 2015).

Partnership is an important thing that supports the success of a program. A program will not work well if the program has no partner or network. The ARI program conducts partnerships and networks with cross-cutting programs that support the program such as sanitation that helps in resolving ARI issues in terms of the environment. This study showed that holders of the ARI Controlling Program who have never attended training in capacity building of human resources have a 17.3 times risk of not achieving the target on coverage of pneumonia in under-five children in the work area of Health Center than those who have attended the training. This study is in line with the research of Rahman that the training of officers has a significant relationship with the compliance of officers in the management of pneumonia which means that trained officers are more obedient 1.53 times than unskilled officers and officers who have been trained more than 1 times have a chance 1.26 times (Rahman, 2014).

Statistically, this study found that there was no significant relationship between monitoring and evaluation with coverage of pneumonia findings in under-five children in Banyuwangi Regency. However, monitoring and evaluation activities in Banyuwangi Regency have been running well. Unachieved coverage of pneumonia findings is caused by several other factors that affect it. Monitoring is conducted every month by program holders in Regency on the coverage of pneumonia findings. Evaluation is performed every 6 months in the form of data validation on the coverage of pneumonia findings in under-five children in Health Center, so if there is a decrease in case detection, it can be known in advance and evaluate the performance, why is it still little. After the program is evaluated, program holders can increase efforts in the findings of pneumonia cases to achieve national targets.

CONCLUSION

The conclusion of this research is there was a significant correlation between characteristics of officers which include age, length of work, and ARI control activity in the form of human resource capacity improvement with coverage of pneumonia findings in under-five children. There was no significant correlation between characteristics of officers which include sex, education, and knowledge; the availability of logistics which includes diagnostic tools, manuals, IEC media, recording and reporting media as well as ARI control activities which

include advocacy and socialization, findings and management of pneumonia, supervision, recording and reporting, partnerships and networks as well as annual monitoring and evaluation with coverage of pneumonia findings in under-five children.

Based on the above conclusions, the suggestion that can be given to Banyuwangi Regency Health Office is expected to conduct periodic training every year to the holders of ARI Controlling Program on ARI control management, pneumonia management in under-five children and promotion of pneumonia control in under-five children to increase the capacity of human resources available in the Health Center. Training on a regular basis can help new holders of ARI programs to have the opportunity to follow the training immediately to improve their performance in management and handling of pneumonia cases in under-five children.

REFERENCES

Arifeen, S. E., Hoque, D. E., Akter, T., Rahman, M., Hoque, M. E., Begum, K., & Hossain, M. A. 2009. Effect of the Integrated Management of Childhood Illness strategy on childhood mortality and nutrition in a rural area in Bangladesh: a cluster randomised trial. *The Lancet*, *374*(9687): 393-403.

Arini, N. D. 2014. *Hubungan Antara Karakteristik Juru Pemantau Jentik (JUMANTIK) terhadap Status Angka Bebas Jentik (ABJ) di Kelurahan Wonotingal Wilayah Kerja Puskesmas Kagok tahun 2014*. Skripsi. Semarang: Universitas Dian Nuswantoro

Choiriyah, S., & Anggraini, D. N. 2015. Evaluasi Input Sistem Surveilans Penemuan Penderita Pneumonia Balita Di Puskesmas. *Unnes Journal of Public Health*, 4(4): 136-145

Dharoh, A. 2014. *Faktor-faktor yang Berhubungan dengan Cakupan Penderita Pneumonia pada balita di Kota Semarang*. Skripsi. Semarang: Fakultas Kesehatan Masyarakat Universitas Dian Nuswantoro

Health Office of East Java Province. 2014. *Health Profile of East Java Province 2013*. Surabaya: Health Office of East Java Province

Kujamas, F.W., Warouw, H., Bawotong, J. 2014. Hubungan Karakteristik Individu dengan Kinerja Perawat di Ruang Rawat Inap Penyakit Dalam RSUD Datoe Banangkang Kabupaten Bolaang Mongondow. *Jurnal Keper-*

awatan. 2 (2): 1-8

Marlinawati, L. S.. 2015. *Faktor-faktor yang Mempengaruhi Penemuan Kasus Pneumonia Balita di Puskesmas Kota Tanggerang Selatan Tahun 2015.* Skripsi. Jakarta: Fakultas Kedokteran dan Ilmu Kesehatan Universitas Islam Negeri Syarif Hidayatullah

Health Ministry of Republic Indonesia. 2013. *Riset Kesehatan Dasar.* Jakarta: Health Ministry of Republic Indonesia

Prabawa, H. E., & Azinar, M. 2017. Faktor-Faktor Yang Berhubungan Dengan Praktik Penemuan Pneumonia Balita Oleh Bidan. *Unnes Journal of Public Health*, 6(3): 148-154

Putriarti, R.T., Suparwati, A., Wigati, P.A. 2015. Analisis Sistem Manajemen Program P2 ISPA di Puskesmas Pegandan Kota. *Jurnal Kesehatan Masyarakat,* 3(1) : 85-94

Rahman, A. 2014. Evaluasi Kepatuhan Petugas dalam Tatalaksana Pneumonia di Kabupaten Tolitoli. *Promotif.* 3 (2): 101-109