

— 10TH NSCE —

# PROGRAM BOOK

“COVID-19 will not be the last:  
Sustaining gains made during COVID-19  
for future pandemic”

## WELCOME MESSAGE

Dear Conference Participants,

Greetings and welcome to the 10th National Scientific Conference on Epidemiology (NSCE), where FETP students, trainees, and alumni share their scientific findings through oral and poster presentations featuring the results of public health research and outbreak investigations. This year, we received 77 presentations (47 oral and 30 posters) from five university presentations (UI, UGM, UNAIR, UNUD, and UNHAS), FETP-Intermediate, FETP-Frontline.

The conference will be held on 9-12 October 2023 at the Fourpoints Hotel which is strategically located. This is located in the central of Makassar and will be the largest annual event in Indonesia devoted to the science and practice of field epidemiology. Field epidemiologists are people who help track, contain, and eliminate outbreaks before they become epidemics. They quickly communicate important information about health issues in the community, including communicable and non-communicable diseases, as well as environmental hazards.


This year's NSCE theme is "COVID-19 will not be the last: **“Sustaining gains made during the COVID-19 for future pandemic”**". COVID-19 is not the last pandemic because in the future there is the possibility of the emergence of other diseases with epidemic/pandemic potential. Therefore, as part of the IHR recommendations, it is necessary to carry out preparedness and response efforts, including efforts to strengthen surveillance as part of early detection and control of disease.

FETP graduates are ready to use workers who have the competency to carry out evidence-based surveillance, carry out early detection of Public Health threats, investigate outbreaks and communicate to relevant stakeholders their findings based on epidemiological analysis. The Ministry of Health greatly appreciates the work carried out by FETP and its network as well as all partners throughout Indonesia to strengthen field epidemiological capacity so as to contribute to strengthening the health system and ensuring health security. Learning during the Covid-19 Pandemic clearly requires collaboration and partnership from all parties.

We are pleased to have our colleagues from the Ministry of Health, Provincial Health Office (PHO), Health Quarantine Center, B/BTKL, Coordinator of FETP UI, UGM, UNAIR, UNUD, UNHAS and UNDIP, Association of Indonesian Epidemiologists (PAEI), US CDC, WHO, JICA, FKMKM-UGM, MoH of Malaysia, and all parties who had the opportunity to attend this conference. In the breakout session there will be oral speakers which will be divided into 12 sessions and poster speakers from FETP students/trainees and alumni.

I would like to appreciation and thanks to the Organizing Committee of the Surveillance Team, Directorate of Surveillance and Health Quarantine, FETP Indonesia Secretariat, WHO Indonesia, US CDC Representative Office in Indonesia, and Health Security Partners (HSP) who worked hard for this conference. I wish you a wonderful conference experience, experience the unique culture, heritage and traditions of Sulawesi. Once again, welcome and enjoy the conference.

Makassar, 23 September 2023

  
**Dr. dr. Maxi Rein Rondonuwu, DHSM., MARS**  
Director General of Disease Prevention and Control

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## **Acknowledgements**

Many people have made significant contributions to the development, organization, and implementation of this conference, and they all deserve our acknowledgement and thanks for their contributions.

A number of committees and working groups were responsible for the scientific program and all organizational matters for the 10<sup>th</sup> National Scientific Conference on Epidemiology. First, we wish to thank all the members of these committees for their valuable inputs and suggestions.

We also wish to thank all the institutions/organizations and their staff, who have contributed for the success of this conference.

### **Organizations/Institutions Involved Include:**

Ministry of Health, Republic of Indonesia  
Directorate General of Disease Prevention and Control, MoH  
Secretariat of FETP Indonesia  
FETP, Universitas Indonesia  
FETP, Universitas Gadjah Mada  
FETP, Universitas Airlangga  
FETP, Universitas Udayana  
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Indonesian Epidemiology Association (PAEI)  
Indonesian FETP Alumni Association (PAELI)  
U.S CDC Indonesia Country Office  
WHO Indonesia Country Office  
Health Security Partners (HSP)

### **Special thanks go to:**

This conference would not have happened without the hard work of the invited speakers, researchers, abstract reviewers and moderators, who provided proceedings for symposiums, oral and poster presentation sessions and workshops.

Special gratitude and acknowledgement go to conference crew: Indonesia FETP Secretariat; Directorate of Surveillance and Health Quarantine; U.S CDC Indonesia Country Office; WHO Indonesia Country Office, and HSP for their continuous support

for the success of the conference and special thanks goes to dr. Achmad Farchanny Tri Adryanto, MKM; dr. Triya Novita Dinihari; Eka Muhiriyah, S.Pd, MKM; dr. Irma Gusmi Ratih, M.Epid; and dr. Haripurnomo Kushadiwijaya, MPH, Dr.PH for their inputs and guidance since inception to completion.

The smooth conduct of the conference has been made possible due to the kind assistance from staff of South Sulawesi Provincial Health Office, KKP Makassar, BTKLPP Makassar, FKM UNHAS, and other volunteers in almost all areas of the conference. They provide information, assist in the conference venue, fix technical problems of different kinds, assist the speakers and give a hand wherever an unforeseen problem emerges, to mention just a few of all volunteer tasks. They come from different parts of the Indonesia and various backgrounds and are all committed to supporting you and making the conference an enjoyable and successful event. In addition, we would like to appreciate the support provided by Four Points by Sheraton Hotel Makassar.

Last but not least, we would like to express our gratitude to all sponsors and partners who supported our ideas, gave advice and supported in all possible ways.

THANKS to everybody who made this 10<sup>th</sup> National Scientific Conference on Epidemiology possible and a great experience!

# Conference Agenda

Date/Time	9 October Monday	10 October Tuesday	11 October Wednesday	12 October Thursday
8:00 – 8:30	Registration	Registration		
8:30 – 10:00	<b>Pre-Conference:</b> <ul style="list-style-type: none"> <li>- FETP Mentor <i>(Lotus A Ballroom)</i></li> <li>- Surveillance System Evaluation <i>(Lotus B Ballroom)</i></li> <li>- Scientific Writing <i>(Toraja A Room)</i></li> </ul>	<b>Opening Ceremony</b> <i>(Lotus A Ballroom)</i>	<b>Plenary Session 2: Strengthening Surveillance</b> <i>(Lotus A Ballroom)</i>	<b>Special Presentations</b> <i>(Lotus A Ballroom)</i>
10:00 – 10:15	<b>Morning Tea</b>			
10:15 – 12:00	<b>Pre-Conference</b>	<b>Plenary Session 1: Preparedness and Response</b> <i>(Lotus A Ballroom)</i>	<b>Poster Presentation</b> <i>(Lotus Ballroom Hall)</i>	<b>Closing &amp; Awarding Ceremony</b> <i>(Lotus A Ballroom)</i>
12:00 – 13:00	<b>Lunch</b>			
13:00 – 14:00	<b>Pre-Conference</b>	OP 1: Vaccine Preventable Diseases (1) <i>(Lotus A Ballroom)</i>	OP 9: Food or Waterborne Diseases (2) <i>(Lotus A Ballroom)</i>	
		OP 2: Food or Waterborne Diseases (1) <i>(Lotus B Ballroom)</i>	OP 10: FETP-Frontline <i>(Lotus B Ballroom)</i>	
14:00 – 15:00		OP 3: Vector-borne Diseases <i>(Lotus A Ballroom)</i>	OP 11: Maternal & Child Health <i>(Lotus A Ballroom)</i>	
		OP 4: NCD and other <i>(Lotus B Ballroom)</i>	OP 12: Vaccine Preventable Diseases (2) <i>(Lotus B Ballroom)</i>	
15:00 – 15:30	<b>Afternoon Tea</b>			
15:30 – 16:30		OP 5: Zoonotic Diseases <i>(Lotus A Ballroom)</i>	<b>Plenary Session 3: Strengthening EWARS</b> <i>(Lotus A Ballroom)</i>	
		OP 6: FETP-Intermediate <i>(Lotus B Ballroom)</i>		
16:30 – 17:30		OP 7: Infectious Diseases <i>(Lotus A Ballroom)</i>		
		OP 8: Respiratory Diseases <i>(Lotus B Ballroom)</i>		

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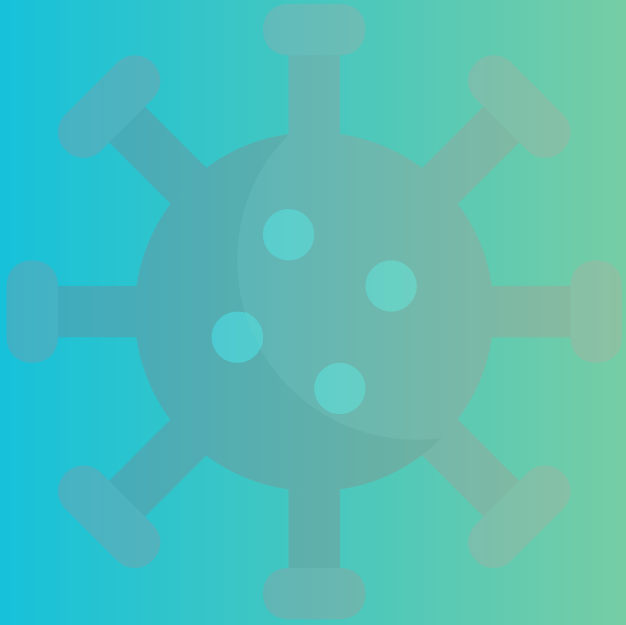
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# Oral Presentations



# **Vaccine Preventable Diseases (1)**



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# Investigation of the Pertussis Outbreak in Bulukumba District, 2023

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Tuesday, 10th October - 13:00: (Lotus A Ballroom) - Oral

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*Mrs. Nurlailah Muhyiddin<sup>1</sup>, Dr. Ida Leida Maria<sup>1</sup>, Mr. Andi Pananrang Rasyid<sup>2</sup>*

*1. Hasanuddin University, 2. Barru District Health Office*

## **Background**

Based on the W1 report from the Bulukumba District Health Office on 2<sup>nd</sup> January, 2023 there had been an outbreak of pertussis. The initial number of cases was 5 people and 3 of them were laboratory confirmed. An investigation was carried out to get an overview and identify risk factors for this outbreak

## **Method**

The research was conducted from January to February 2023 used case controls study with a total of 33 cases and 33 controls. Pertussis cases were people with paroxysmal cough for at least 2 weeks followed by symptoms of whooping cough/vomiting after coughing/apnea. Controls were neighbors or families who lived in the same house with cases and did not show symptoms of coughing, vomiting, or apnea within 10 days after contact with the patient. Data were collected through interviews using a structured questionnaires, anthropometric examinations, and polymerase chain reaction (PCR) tests of nasopharyngeal swab samples.

## **Results**

The cases consist of 13 confirmed and 20 clinically compatible cases. Most cases were 1 - 4 years old (39.4%), male (54.55%), and did not get the DPT/Hb-Hib vaccine (60.61%). The most common symptoms were paroxysmal cough and whooping cough (81.8%). Patients were spread across 7 subdistricts where a majority of cases were in Ujung Bulu Subdistrict (36.36%). Incomplete immunization status is a risk factor for pertussis with OR 3.320 which means that people who did not receive the full dose of DPT/Hb-Hib immunization were at risk 3.32 times higher than those with complete immunization. The coverage of DPT/Hb-Hib3 and DPT/Hb-Hib4 immunization at Bulukumba District in 2020-2021 were <95%.

## **Conclusion**

Incomplete DPT/Hb-Hib immunization history and immunization coverage <95% are risk factors for pertussis outbreak. Rapid Convenience Assessment and DPT/Hb-Hib catch-up immunization in children aged < 5 years were conducted. However, it needs to be improved to increase the coverage of Complete Basic Immunization.

## **Keywords**

**Outbreak, Pertussis, Immunization, DTP-Hep-Hib, DPT/Hb-Hib, Bulukumba**

# Spatial Risk Mapping of the Incidence of Diphtheria in East Java, 2018-2022

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Tuesday, 10th October - 13:15: (Lotus A Ballroom) - Oral

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**Mrs. Retno Ningsih**<sup>1</sup>, **Dr. Lucia Yovita Hendrati**<sup>2</sup>, **Mrs. Laura Yamani**<sup>3</sup>, **Mr. Antonius Ratgono**<sup>4</sup>

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## Background

Diphtheria is an acute infectious disease caused by the *Corynebacterium diphtheriae* and often causes an outbreak. Diphtheria cases in East Java are the largest contributor to diphtheria cases nationally. This study aims to describe the incidence of diphtheria and analyze the related factors of the diphtheria incidence in East Java in 2018-2022.

## Method

This research is an observational study with an ecological study design. This study takes all administrative areas throughout East Java as the unit of analysis. The data collected is secondary data from document studies at several institutions. The independent variables are the proportion of at-risk age groups, sex ratio, basic immunization coverage, advanced immunization coverage, population density, population mobility and health service facilities per 100,000 population. The data were analyzed spatially on overlay maps and analyzed using Ordinary Least Square (OLS) for multivariate analysis.

## Results

There were 1,495 cases of diphtheria in East Java during 2018-2022. The highest incidence rate occurred in 2018 (1.91 per 100,000 population). Most of the diphtheria cases occurred in males (52.1%), in the age group greater than or equal to 15 years (37.5%) and had received diphtheria immunization (67.3%). The distribution of diphtheria cases tends to cluster in areas near urban areas. The results of multivariate analysis showed that population density ( $p=0.004$ ), population mobility ( $p=0.035$ ), and health service facilities per 100,000 population ( $p=0.011$ ) were significantly related to the incidence of diphtheria.

## Conclusion

The risk of diphtheria transmission in East Java Province in 2018-2022 was related to population density and mobility, as well as health care facilities per 100,000 population. The local governments need to increase awareness of the diphtheria transmission in areas with high population density and mobility. In addition, it is necessary to increase the quantity and quality of basic level health service facilities in the prevention and control of diphtheria.

## Keywords

diphtheria, population density, population mobility, spatial

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# Investigation of Measles Outbreaks at Elementary School X, Banguntapan, Bantul, 2023

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Tuesday, 10th October - 13:30: (Lotus A Ballroom) - Oral

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***Ms. Lina Juhaidah*<sup>1</sup>, *Mrs. Triana Wardhani*<sup>1</sup>, *Mrs. Tita Fajarwati Paramitasari*<sup>2</sup>, *Mr. Bayu Satria Wiratama*<sup>3</sup>**

*1. Field Epidemiology Training Program (FETP) Universitas Gadjah Mada, 2. Magelang District Health Office, 3. FETP Universitas Gadjah Mada*

## **Background**

The Bantul District Health Office received a notification regarding eight suspected measles cases at elementary school X on 6 February 2023. An investigation was conducted with aims to confirm the existence of an outbreak, identify risk factors, and control the outbreak.

## **Method**

We conduct active case findings followed by a 1:2 case control study to determine the risk factors for measles. Cases were people with symptoms of fever  $>38^{\circ}$  Celsius and rash, accompanied by one or more of the symptoms of cough, runny nose, red eyes and diarrhea. Controls were asymptomatic classmates. The total sample is 45 (15 cases and 30 controls). The investigation was carried out by interviews and observation. The risk factors observed were sex, history of measles immunization, and close household contact with cases. Multivariable analysis using logistic regression.

## **Results**

There were 15 cases identified and age ranged from 7-15 years. Most cases were female (80%) and 7 years old (60%). 100% have symptoms like fever, rash accompanied by cough, runny nose, conjunctivitis. Nine samples were collected and all were positive for measles. The results of multivariate analysis showed that the incidence of measles outbreaks at elementary school X was associated with incomplete measles immunization status (aOR= 6.851; 95% CI: 1.408-33.340) and history of household contact with measles cases (aOR=5.054; 95% CI: 0.669-38.199). The probable source of an outbreak was an index case who have no history of immunization and live in an area with basic immunization coverage of 86.67% in 2022.

## **Conclusion**

There was an outbreak of measles at elementary school X from 21 January to 11 February 2023. Measles immunization status and close household contact with measles cases were associated with increased risk of measles. Conducting selective ORI were done to control this outbreak. It is recommended for elementary school X to make immunization mandatory for students.

## **Keywords**

Measles, Disease Outbreaks, Risk Factors, Immunization, Close-Contact Transmission

# The Association between low coverage of Measles Rubella Immunization and extraordinary events of Measles in Boyolali District, Central Java Province, from January 19 to April 16, 2023

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Tuesday, 10th October - 13:45: (Lotus A Ballroom) - Oral

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***Mrs. Sriyani Rangi*<sup>1</sup>, *Ms. Elly Rosmawati*<sup>2</sup>, *Dr. Riris Andono Ahmad*<sup>3</sup>, *Mr. Teguh Tri Kuncoro*<sup>4</sup>**

*1. Field Epidemiology Training program (FETP) Gadjah Mada University, 2. 1. Field Epidemiology Training Program (FETP), Gadjah Mada University, 3. Field Epidemiology Training Program (FETP) Universitas Gadjah Mada, 4. Boyolali District Health Office*

## **Background**

Measles is an infectious disease that can be prevented by MR immunization, but it still often causes outbreaks. Data from the Boyolali District Health Office recorded 131 suspected measles and three outbreaks during 2022. On January 18, 2023, the Boyolali District Health Office was notified of five cases of sick kindergarten students with symptoms of fever, rash, cough, flu, and red eyes. An investigation was conducted to confirm the outbreak, identify risk factors, break the chain of transmission, and recommend further actions to health officials.

## **Method**

We conducted a case-control study with 39 respondents, consisting of 13 cases and 26 controls. Cases were people with symptoms of rash and fever accompanied by cough, flu, conjunctivitis and have an epidemiological relationship. Controls were people in the same class but did not have the same symptoms as cases. The serum sample was sent to the laboratory for examination of measles IgM. Data were collected using a structured questionnaire the chi-square test, Fisher's exact test, and logistic regression analyses were used to estimate the relationship between MR Immunization, contact history and gender on the incidence of measles.

## **Results**

Measles cases were dominated by males (84.6%), aged six years (100%), history of contact (92.3%), and did not get complete MR Immunization (92%). Three samples were positive for IgM measles. Immunization coverage is the variable that has a significant relationship with the incidence of measles (aOR=0.04; 95% CI=0.005-0.422; P value 0.003).

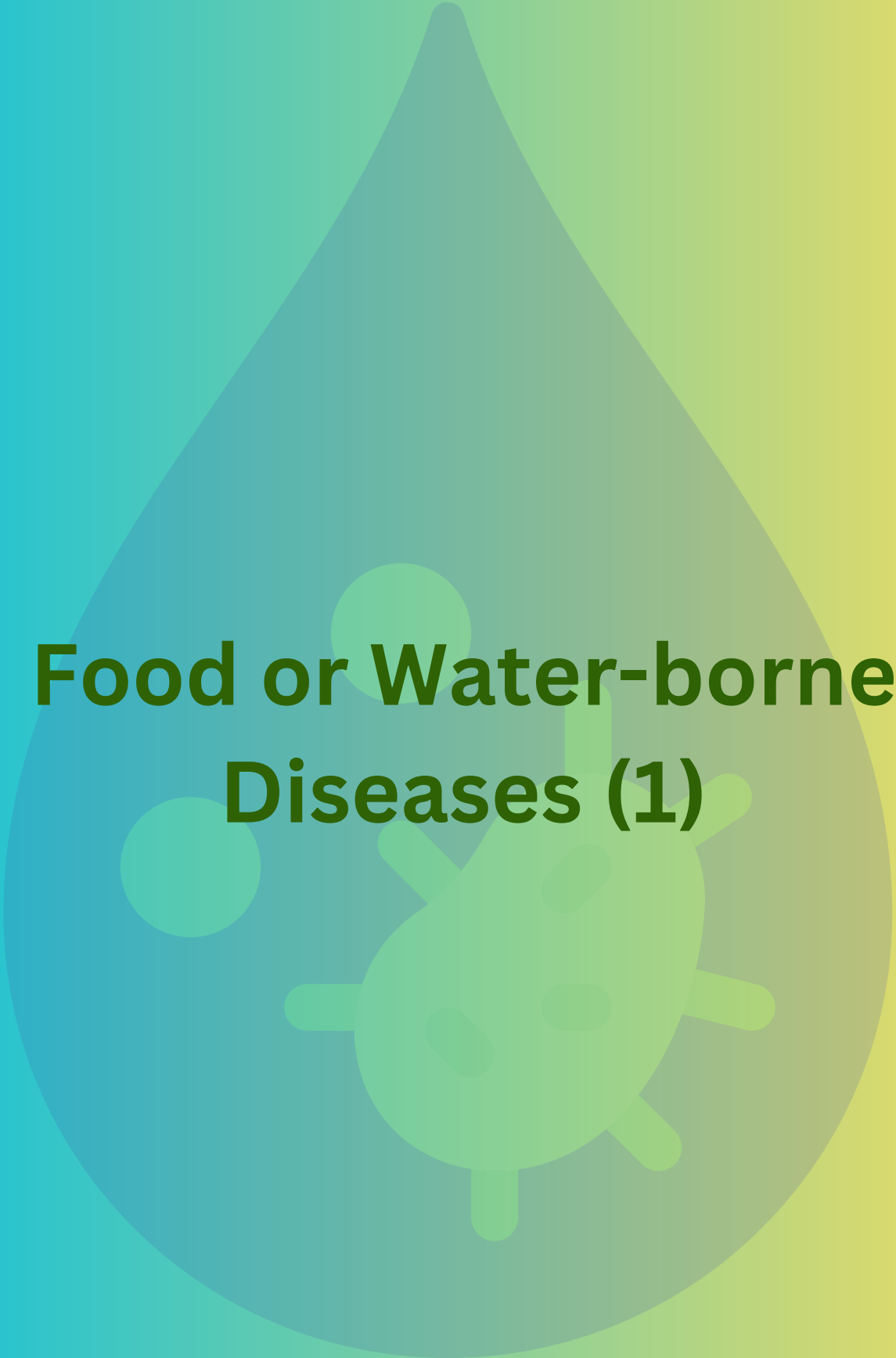
## **Conclusion**

There was an outbreak of measles in kindergarten schools in Boyolali District, mainly due to the lack of MR immunization coverage. The Health Office is expected to routinely monitor and evaluate the MR immunization program in areas with low coverage and inform the public about measles control, including immunization coverage, self-isolation if infected and providing therapy to the symptomatic.

## **Keywords**

Measles, case-control, MR Immunization, Boyolali District

# **Food or Water-borne Diseases (1)**



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# Analysis of The Risk Factors Hepatitis A Outbreak at Islamic Boarding School X, Rokan Hilir Regency, Riau Province in 2023: A Case-Control Study

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Tuesday, 10th October - 13:00: (Lotus B Ballroom) - Oral

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*Mr. Said Mardani*<sup>1</sup>, *Dr. Dr. dr. Helda, M.Kes*<sup>1</sup>, *Dr. Irwan Muryanto*<sup>2</sup>, *Mr. Rajunitrigo Rajunitrigo*<sup>2</sup>

*1. Universitas Indonesia, 2. Dinas Kesehatan Provinsi Riau*

## Background

Outbreaks of hepatitis A are a phenomenon that recurs in Indonesia, often affecting schools, dormitories, and workplaces. In January 2023, an outbreak of Hepatitis A occurred at Islamic Boarding School (IBS) X, Rokan Hilir Regency, which infected many students. This study aims to determine epidemiological description and identify the risk factors for hepatitis A outbreaks at IBS X.

## Method

This study uses a case-control design with a ratio of 1:1. Total sample is 232 (116 samples per group). The research population was all students and residents of IBS X. Cases are based on clinical criteria for hepatitis A according to the doctor's diagnosis. Controls are selected using a consecutive sampling method with matching by age and sex. Data collection through interviews and observation using structured questionnaires. Data were analyzed univariate using the frequency distribution table, bivariate using the Chi-Square test, and multivariate using the predictive model conditional logistic regression test.

## Results

This study found that the index case started to feel symptoms on October 20, 2022. Cases increased significantly starting in early December 2022 until reaching a peak in the first week of January 2023 with 22 cases. The epidemic curve shows a continuous common source pattern. Most of the cases were aged 14-16 years (53.45%), male (87.93%), grade 5 students (25.86%), and lived in the Anshor 1 complex (31.03%). The final model of the risk factor regression logistic test obtained two significant variables, namely contact history (OR=9.92, 95% CI: 3.31-29.72,  $p < 0.001$ ) and unclean nail conditions (OR=4.64, 95% CI: 1.55-13.87,  $p = 0.006$ ).

## Conclusion

The risk factors for hepatitis A outbreaks at IBS X were contact history and unclean nail conditions. Prevention efforts are suggested to isolate cases, provide adequate facilities for washing hands with soap, improve environmental sanitation, and increase information and education about clean and healthy behavior and the prevention of hepatitis A.

## Keywords

hepatitis A, outbreaks, hygiene, sanitation, health behavior

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# Foodborne Illness Outbreak by *Staphylococcus aureus* in Galur II Public Health Center, Kulon Progo District, Indonesia, 2022

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Tuesday, 10th October - 13:15: (Lotus B Ballroom) - Oral

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**Mr. Musabir Musabir**<sup>1</sup>, **Mr. Muhammad Fadhil**<sup>2</sup>, **Mrs. Citra Indriani**<sup>2</sup>, **Mr. Sugiarto Sugiarto**<sup>3</sup>, **Mrs. Theodola Baning Rahayujati**<sup>3</sup>

1. FETP Universitas Gadjah Mada, 2. Field Epidemiology Training Program (FETP) Universitas Gadjah Mada, 3. Kulon Progo District Health Office

## Background

On 7<sup>th</sup> July 2022, Galur II Public Health Centre reported 8 cases of gastrointestinal symptoms after consumption of food at a youth activity meeting on 6<sup>th</sup> July 2022. Investigation was conducted to confirm the outbreak, identify the source, determine risk factors, and recommend control measures.

## Method

We conducted a case control study with a ratio of 1: 1. A case was defined as a person who experienced at least two gastrointestinal symptoms after consuming food served on 6<sup>th</sup> July 2022 in the meeting place. Structure questionnaire were used for interview. Food and faecal samples were collected and sent to a public health laboratory. We observed food handling and hygiene practices. Logistic regression was used to calculate odds ratio with a 5%.

## Results

We identified 28 cases from 75 meeting participants (37.3%). Most cases were female (75.0%) and in the age group of 26-45 (42.9%). The main symptoms were stomach ache (82.1%), diarrhoea (78.6%), fever and nausea (71.4%). Epidemic curves showed a common source pattern, and the median incubation period was 9 hours (3 - 36 hours). Jelly had the highest attack rate (44.4%) and laboratory analysis identified *Staphylococcus aureus* contamination in this menu. Food storage in the room temperature time until consumption (OR = 11.3, 95%CI = 2.02 - 111.23) and jelly consumption contributed to the occurrence of foodborne illness outbreak. Odd ratio for jelly consumption found to be infinite because no cases were found in those who not consuming jelly. Hand hygiene practice among the food handlers was poor.

## Conclusion

A foodborne illness outbreak in youth meetings was confirmed. Consuming jelly and time for food storage were contributing factor to the outbreak occurrence. *Staphylococcus aureus* was confirmed as the aetiology agent. Education on food storage and serving among food handler is needed to prevent recurrent outbreak.

## Keywords

Foodborne Illness, Outbreak, Diarrhoea, *S. aureus*.

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# Investigation of Food Poisoning Outbreak at the Akikah Event in Truni Village, Babat Subdistrict, Lamongan District, July 2023

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Tuesday, 10th October - 13:30: (Lotus B Ballroom) - Oral

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**Mr. Muamar Afdhal Mahendra**<sup>1</sup>, **Dr. Lucia Yovita Hendrati**<sup>1</sup>, **Ms. Siti Shofiya Novita Sari**<sup>1</sup>, **Mr. Sigunawan Sigunawan**<sup>2</sup>, **Ms. Ninik Suwarni**<sup>3</sup>

1. Universitas Airlangga, 2. Dinas Kesehatan Kabupaten Lamongan, 3. Puskesmas Babat

## Background

**Background:** On July, 30 2023, Surveillance Staff of the Lamongan District Health Office received a report from the Surveillance Staff of Tripe Health Center that there were 37 patients being treated at four health facilities after consuming food from *akikah* event in Truni Village. Investigation aims to determine risk factors, identify causes, describe prevention.

## Method

**Methods:** A retrospective cohort study using participatory investigative methods was carried out with local health office and *puskesmas*. Primary data collected through interviews using a questionnaire. Interviews were conducted at four health facilities to identify additional cases. A case defined as an individual with one or more symptoms of dizziness, nausea, vomiting, diarrhea, abdominal pain, fever, weakness after consuming food from *akikah* event. Univariable analysis includes person, place, time. Bivariable analysis used the chi-square test to see if there was relationship between rice, urap-urap, fried tofu, tempeh, curry chicken, noodles, sticky rice, eggs, Balinese tofu, Balinese tilapia, stir fried pumpkin with food poisoning.

## Results

**Results:** Out of the 109 populations at risk, 70 people became ill (AR=64%). 53% of people were hospitalized with a CFR of 0%. The majority of cases were women (64%), aged >40 years (47%). Main symptom was diarrhea (87%). Based on place, the most cases occurred in Truni Village (97%). Incubation period ranges from 2-74 hours (mean=17 hours). Epidemic curve showed the peak of cases on July 29, 2023 at 04:30 – 08:29. Statistical analysis showed highest Risk Ratio (RR) in Rice (RR=1.77; P-Value: 0.00). *Salmonella* sp suspected as a bacterium that causes food poisoning. Rice was a high-risk food because it was contaminated with vector-borne microbes.

## Conclusion

**Conclusions:** *Salmonella* sp is suspected of contaminating the food served at the event. At the time of the outbreak, education had been carried out covering dangers of food processing near animal pens and good environmental sanitation management.

## Keywords

**Keywords:** Investigation, Food, Poisoning, Outbreak

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# Investigation of Food Poisoning in the Toddlers Integrated Health Center Gathering at Majegan Village, Pandowoharjo, Sleman Regency, 2023

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Tuesday, 10th October - 13:45: (Lotus B Ballroom) - Oral

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Ms. Jihan Rizka Syaftya La Moma<sup>1</sup>, Mrs. Setyaningrum Setyaningrum<sup>1</sup>, Mr. Isa Dharmawidjaja<sup>2</sup>,  
Dr. Vicka Oktaria<sup>1</sup>

1. Field Epidemiology Training Program (FETP) Universitas Gadjah Mada, 2. Sleman District Health Office

## Background

On May 20, 2023, Six people were reported to have food poisoning with similar symptoms such as nausea, vomiting, and diarrhea in Majegan Village, Pandowoharjo, Sleman after consuming food served in the toddler Integrated Health Center (IHC) gathering. The investigation was aimed to confirm the outbreak, identify the causative agent of food poisoning, and implement preventive and control measures.

## Method

A retrospective cohort study was conducted. All individuals who get and/or consume the food provided at the gathering on May 20, 2023 are at risk. Cases were defined as a person who had nausea or vomiting or diarrhea with or without other symptoms, and consumed food from the gathering on May 20, 2023. Case finding using a structured e-questionnaire via Google form on May 21-22, 2023 was conducted together with environmental assessment and food sampling for laboratory testing.

## Results

There were 82 populations at risk with 36 respondents identified as cases (AR: 44%). Symptoms obtained included nausea (75%), diarrhea (73%), vomiting (61%), dizziness (53%), abdominal pain (37%), and weakness (25%). Those who ate potato fritters were nine times more likely to develop food poisoning compared to other types of food (rice, soup, sambal, and banana) (aRR 7,3; 95%CI 2,49-21,30). From the differential diagnosis according to symptoms, incubation period, and causative agent of poisoning, the suspicious causing bacterial contamination was *Bacillus cereus*. However, laboratory results were not confirmed due to sampling handling lag, sample storage and possible contamination with pathogenic *Escherichia coli*, *Klebsiella pneumoniae*, and *Staphylococcus cohnii*.

## Conclusion

There was an outbreak of food poisoning in the toddlers IHC gathering at Majegan Village, Pandowoharjo, Sleman on May 20, 2023 with clinically suspected *Bacillus cereus* contamination. Health socialization to the community has been carried out. The need to educate food handlers on food safety handling.

## Keywords

foodborne disease, food poisoning, *Bacillus cereus*, community



**Vector-borne Diseases**

# Sensitivity of Case Definition and Timeliness of Surveillance on Malaria Outbreak in Samigaluh District, Kulon Progo Regency, 2022

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Tuesday, 10th October - 14:00: (Lotus A Ballroom) - Oral

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***Mr. Muhammad Fadhil*<sup>1</sup>, *Mrs. Citra Indriani*<sup>1</sup>, *Mrs. Elsa Herdiana*<sup>2</sup>, *Mr. Arief Musthofa*<sup>3</sup>, *Mr. Sugiarto Sugiarto*<sup>3</sup>**

*1. Field Epidemiology Training Program (FETP) Universitas Gadjah Mada, 2. Departement of Parasitology Faculty of Medicine, Public Health and Nursing Universitas Gadjah Mada, 3. Kulon Progo District Health Office*

## **Background**

From April to July 2022, a Malaria outbreak occurred in Samigaluh 1 Health Care, Kulon Progo District. During the early phase of the outbreak, the local health officer used fever only as the case definition for malaria suspects to minimize the missing cases. This study aimed to evaluate the sensitivity of fever as a case definition for suspects and the timeliness of the malaria surveillance system in the recent outbreak and provide lessons for managing recurrent malaria outbreak in an elimination area.

## **Method**

We analyzed secondary data from the malaria surveillance database from April-July 2022, which came from active and passive case finding. Symptoms, address, and microscopic results were used to calculate case definition sensitivity and specificity, and then we compared it with the case definition in the guideline. Date of symptoms onset and reporting date to the health center was used to calculate the timeliness of the surveillance system. We used tables and graphs to describe the result descriptively.

## **Results**

Total 122 records were extracted and consisted of 52 confirmed cases and 70 suspect cases. The fever only had 59.6% sensitivity, 62.9% specificity and 54.4% positive predictive value (PPV), while the guidelines for fever and live-in outbreak areas gave higher specificity and PPV of 85.7%, 75.6% and 59.6% sensitivity. The timeliness of reporting was 9 days after the onset in the early outbreak period, and it shortened into 3 days after strengthening case detection as part of a control measure.

## **Conclusion**

The case definition in the guideline gave the highest sensitivity and specificity for early detection. Shortened timeliness of reporting triggered early response that contributed to the success of transmission control. During the outbreak, case definition should be referred to the guideline. A modified case definition to increase early detection sensitivity might be used if the available evidence is supported because it affects resource availability.

## **Keywords**

Malaria, Outbreak, Sensitivity, Timeliness, Surveillance

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# Investigation of Malaria Outbreak in Serdang Bedagai Regency, 2022

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Tuesday, 10th October - 14:15: (Lotus A Ballroom) - Oral

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*Mrs. Novia Syahreni*<sup>1</sup>, *Dr. Muhammad Atoillah Isfandiari*<sup>1</sup>, *Mr. Frans Yosep Sitepu*<sup>2</sup>

1. Universitas Airlangga, 2. Dinas Kesehatan Provinsi Sumatera Utara

## Background

Malaria has been eliminated from Serdang Bedagai Regency, North Sumatera Province since 2016, but unfortunately, in the end of 2021 there was a report of malaria cases in the area. There were as much as 125 cases of malaria were reported (until June 2022), and the area of Sialang Buah Community Health Centre as the highest reported cases. This study aimed to confirm the outbreak and identify the risk factors of malaria at Sialang Buah Health Community Health Center working area.

## Method

This was a case-control design with 30 cases and 60 controls. The cases were residents who had major clinical symptoms of malaria and positive of laboratory examination in 2022, while controls were neighbor of the cases who did not have clinical symptoms. The data was collected using questionnaire. An entomology investigation was carried out calculating the larva habitat index and capturing and identifying mosquitoes. Logistic regression was performed to estimate Odds ratios (OR) and 95% Confidence Interval (95% CI)

## Results

There were 30 persons confirmed for *Plasmodium vivax* by rapid diagnostic test with the highest age group of cases were 15-64 years old (67%) and male (73%). The epidemic curve was propagated source means malaria transmission still going in the area. Results of multivariate analysis showed men was associated 16.166 times odds of getting sick from malaria (95% CI = 2.810 – 93.000) and habit going out at night increased the chances of getting infected 29.058 times (95% CI = 1.510 – 559.167). Larva habitat index was 36% and 4 *Anopheles species* were identified.

## Conclusion

The significant risk factors were gender and habit going out at night associated with malaria outbreak at Sialang Buah Health Community Health Center working area. We recommended conducting health promotion, early case finding and reduce activities outside the house at night.

## Keywords

*Malaria, Outbreak, Investigation, Serdang Bedagai*

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# Evaluation of Dengue Vector Surveillance System (*Silantor*) in Kebumen District, 2021

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Tuesday, 10th October - 14:30: (Lotus A Ballroom) - Oral

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***Ms. Tutik Inayah Susilaningsih*<sup>1</sup>, *Mr. Bayu Satria Wiratama*<sup>2</sup>, *Mrs. Citra Indriani*<sup>1</sup>, *Mr. Akhmad Mukhibin*<sup>3</sup>**

*1. Field Epidemiology Training Program (FETP) Universitas Gadjah Mada, 2. FETP Universitas Gadjah Mada, 3. Kebumen District Health Officer, Central Java, Indonesia*

## **Background**

The completeness of the larval free rate report as an indicator of *Aedes aegypti* in Kebumen through dengue vector surveillance (*Silantor*) has not reached the target. This study aims to evaluate the performance of *Silantor* in Kebumen District and provide recommendation to improve the surveillance system.

## **Method**

This study used an observational descriptive study design based on WHO guidelines to monitor and evaluate the quality of the dengue surveillance system in Kebumen District from January to December 2021. Data collected through interviews using standardized questionnaires for the dengue program manager in Kebumen. Data were analyzed by scoring and divided into three categories: good (>80%), moderate (60-80%), and poor (<60%). Data were presented in the form of tables and graphs, while open questions were narrated and quantified according to the results obtained.

## **Results**

There were a total of 36 participants. Most dengue program managers were female (67%) with diploma education and 1-5 years of service. The source of larval free rate data was routine and incidental periodic larval monitoring which was not consistent. The completeness of the report, timeliness, simplicity, acceptability, flexibility, and representativeness of the *Silantor* were poor, while the usefulness was moderate. The constraints identified were the lack of implementation of regulation, the insufficiency of the data collection strategy, the lack of monitoring and evaluation, multiple jobs, the fact that they had not received any training, and the fact that they did not understand how to analyze the data.

## **Conclusion**

This study concluded that the implementation of dengue vector surveillance (*Silantor*) in Kebumen district was not good based on the surveillance attributes assessment. It is necessary to increase routine surveillance, monitoring, and evaluation to identify obstacles and improve program performance through the quality data sources.

## **Keywords**

dengue, Kebumen, surveillance, *silantor*

# Improving Dengue Hemorrhagic Fever (DHF) Surveillance with the PASS-DBD Application: A Study in Bantaeng Regency, Indonesia

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Tuesday, 10th October - 14:45: (Lotus A Ballroom) - Oral

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*Mr. Irsal Muhlis<sup>1</sup>, Mrs. Ida Leida Maria<sup>1</sup>, Prof. Andi Arsunan Arsin<sup>1</sup>*

*1. Hasanuddin University*

## **Background**

Dengue Hemorrhagic Fever (DHF) is the most common viral infection transmitted by Aedes mosquitoes, putting over 3.9 billion people from 129 countries at risk and it approximately causes 40,000 deaths annually. One of the right strategies to reduce DHF cases is DHF surveillance. Technological developments enable active surveillance to increase the discovery, recording and reporting of DHF cases in Bantaeng District Our study aims to analyze the effectiveness of the Dengue Hemorrhagic Fever Surveillance System application (*Aplikasi Sistem Surveilans Demam Berdarah Dengue/PASS-DBD*) for recording and reporting suspected cases of dengue in Bantaeng District.

## **Method**

We employed a quasi-experiment method with non-randomized control group pretest-posttest design. Two treatment groups served as PASS-DBD application users at RT 02, and a control group at RT. 01, Pallantikang Sub-District. A total of 112 households were sampled using 1:1 ratio. We include households owner and their ability to operate an android smartphone. Data was collected through interviews and documents review. Mann-whitney U test was used to compare the intervention and control group mean scores.

## **Results**

The use of PASS-DBD led to a significant increase in reporting suspected dengue cases (increased to 233.33%) during the 3 months of piloting periods. The effectiveness analysis of PASS-DBD revealed notable differences in the mean values of simplicity of the application of 26.43 point acceptability of 27.86 point data quality of 31.79 point and timeliness of 34.21 point

## **Conclusion**

Our study demonstrated that the PASS-DBD application is user-friendly, enhances data quality and reduce time required for data transmission compared to the manual registration and paper-based reporting system. As a result, the application proves to be in recording and reporting suspected dengue cases.

## **Keywords**

Dengue Fever, DHF, System Surveillance, m-Health, Public Health Center.



# **Non-Communicable Diseases and Other**

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# Analysis of Factors Affecting Health Care Seeking Behavior Related to Hypertension: A Cross-Sectional Study - Gunungkidul District, 2023

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Tuesday, 10th October - 14:00: (Lotus B Ballroom) - Oral

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**Mr. Bangun Hot Pandapotan Lumban Gaol<sup>1</sup>, Mr. Sidig Hery Sukoco<sup>2</sup>, Dr. Riris Andono Ahmad<sup>1</sup>, Dr. Anggoro Budi Hartopo<sup>3</sup>**

*1. Field Epidemiology Training Program (FETP) Universitas Gadjah Mada, 2. Gunungkidul District Health Office, 3. Department of Cardiology and Vascular Medicine, Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia*

## Background

According to the 2018 RISKESDAS survey, the prevalence of hypertension cases in the Gunungkidul district was highest in DIY, but the number of cases detected at healthcare facilities was low. This study analyzes the factors influencing healthcare-seeking behavior related to hypertension in Gunungkidul District.

## Method

We conducted a cross-sectional study in Wonosari and Saptosari sub-districts in April-May 2023. A sample of 274 people aged >18 was recruited using cluster random sampling. We collected data on age, sex, education level, employment, blood pressure measurement, family and personal history of hypertension, knowledge, and health belief perception of hypertension, and health-seeking behavior using questionnaires. Additionally, data on blood pressure was also collected. We conducted bivariable and multivariable logistic regression analysis test using STATA software version 15.

## Results

Of the 274 respondents, 47.1% were 18-44 years old, female (77.74%), graduated from high school (53.65%), and not working (48.54%). The most visited healthcare was Puskesmas (40.51%). Based on the blood pressure measurements, 65 people (23.72%) had high blood pressure, 28.83% had a family history of hypertension, and 18.61% were aware they had hypertension. Variables significantly associated with healthcare-seeking behavior were age  $\geq 60$  years (aPR 1.56 95%CI 1.264-1.914), perceived barriers (aPR 1.45 95%CI 1.113-1.884), cues to action (aPR 1.37 95%CI 1.063-1.775), and perceived vulnerability (aPR 1.19 95%CI 1.034-1.366). Being  $\geq 60$  years old, having no perceived barriers, having cues to action, and perceived vulnerability related to hypertensive disease increased the prevalence of healthcare-seeking behavior related to hypertensive disease.

## Conclusion

Age and health belief perceptions affect healthcare-seeking behavior related to hypertension. We recommend education and health campaign to improve health perceptions of hypertension in the community.

## Keywords

hypertension; noncommunicable diseases; knowledge; health care seeking behavior

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# Modelling Predictors of Victim Severity and Mapping Traffic Accidents: Case Study of Police Record Data in Denpasar City in 2020

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Tuesday, 10th October - 14:15: (Lotus B Ballroom) - Oral

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*Mr. I Ketut Lanang Dwi Bunda Putra*<sup>1</sup>, *Mrs. Ni Made Dian Kurniasari*<sup>1</sup>

*1. Udayana University*

## Background

**Background:** The severity of traffic accident victims is known as the impact which is influenced by multiple factors including human factors, vehicles, the environment, and other factors related to the causes of traffic accidents itself. This study aims to determine predictors of victim severity also to mapping traffic accidents in Denpasar in 2020.

## Method

**Method:** The design of this study is an analytic observational with a cross-sectional approach. Secondary data was collected at the Sub-regional Police Office of Denpasar City. The analytical method to determine the predictors of the severity of traffic accident victims using the Multinomial Logistic Regression test, while the spatial analysis or traffic accident mapping uses a geographic information system (dot density map and heat map or kernel density estimation).

## Results

**Results:** In this study, 641 victims of traffic accident were found (85% were minor injured, 5% were seriously injured and 10% died). Most are young or  $\leq 25$  years old, work as private employees, male, and role as vehicle drivers when a traffic accident occurs. Also, the accidents happen mostly due to negligence and suffered side hit. The results of the Multinomial Logistic Regression test showed that there was a significant relationship between the elderly group ( $\geq 46$  years) (RRR=3,01;95% CI 1,39–6,51), accidents in trading areas (RRR=0,36; 95% CI 0,13–0,94), time of collision at 16.00–20.00 (RRR=0,30; 95% CI 0,10–0,85), and hit and run (RRR=2,48; 95% CI: 0,98–6,28) with the victim severity ( $p < 0.05$ ). The accidents were found clustered at several points in Denpasar City.

## Conclusion

**Conclusion:** Most of the victims suffered minor injuries. There was a significant relationship between the elderly group ( $\geq 46$  years), trading area, time of collision at 16.00 – 20.00, and hit and run with the severity of the victim ( $p < 0.05$ ). The accidents were found clustered at several points in Denpasar City.

## Keywords

**Keywords:** Victim Severity, Traffic Accidents, Multinomial Logistic Regression, Geographical Information System

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# Analysis of Potential Suicide Risk Factors through Surveillance of Mental Disorders in Gunungkidul District, Special Region of Yogyakarta, Indonesia 2022

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Tuesday, 10th October - 14:30: (Lotus B Ballroom) - Oral

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***Mr. Brema Damanik<sup>1</sup>, Mr. Bangun Hot Pandapotan Lumban Gaol<sup>1</sup>, Mr. Musiyanto Musiyanto<sup>2</sup>, Mr. Sidig Hery Sukoco<sup>2</sup>, Dr. Riris Andono Ahmad<sup>1</sup>***

*1. Field Epidemiology Training Program (FETP) Universitas Gadjah Mada, 2. Gunungkidul District Health Office*

## **Background**

The Gunungkidul District Health Office (DHO) reported of on average 30 suicides cases annually. This study aims to determine the causal factors of suicide cases in Gunungkidul District.

## **Method**

This study used 1:4 case control design. Case is defined as people with suicidal intentions from October-14 November 2022. Control is people with mental health problems but do not have suicidal intentions during the same period as cases. Matching was done based on the location of the sub-district, age, and gender to determine control. The inclusion criteria are local people of Gunungkidul District with ages between 18-50 years. The data source comes from secondary self-assessment data through online questionnaires of the mental health screening activities in 30 Public Health Centers (PHCs). Multivariate analysis was done using logistic regression.

## **Results**

There were 33 cases from 165 people interviewed, with 78.8% women and more than 50% young adults (18-25 years). Based on bivariate analysis, we found that victims of violence, bullying, the impact of COVID-19, fear of life pressure, lack of interest in life, hallucination, feelings of worthlessness, sleeping problem and traumatised had a p-value less than 0.05. Multivariate analysis showed that participants who had feelings of worthlessness had odds 90 (AOR 90.65; 95% CI 8.31-988.35) times higher to experience suicidal intention than those without feelings of worthlessness. It was also the leading risk factor in this study.

## **Conclusion**

Feeling worthlessness is the most influential risk factor for suicidal intention. Gunungkidul District needs counselling training for health workers, early detection of mental disorders, and the provision of psychological staff at all PHCs. Gunungkidul district also needs to conduct a mental health survey covering all of the districts to obtain a better estimate of this problem.

## **Keywords**

mental health, suicide, mental disorders, logistic regression

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# Community-based Water Supply and Sanitation Program (PAMSIMAS) Contamination as a Risk Factors for Outbreaks in Giripurno Village, in Kebumen District, Central Java, 2023

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Tuesday, 10th October - 14:45: (Lotus B Ballroom) - Oral

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*Mrs. Devvy Herawati Silayuningsih*<sup>1</sup>, *Ms. Andini Rahmahdhani*<sup>2</sup>, *Mr. Akhmad Mukhibin*<sup>3</sup>, *Mrs. Maryati*<sup>-3</sup>, *Mr. Bayu Satria Wiratama*<sup>4</sup>

1. Field Epidemiology Training Program (FETP) Universitas Gadjah Mada, 2. 1. Field Epidemiology Training Program, Universitas Gadjah Mada, 3. 2. Kebumen District Health Officer, Central Java, Indonesia, 4. FETP Universitas Gadjah Mada

## Background

**Background:** On 13 May 2023, Primary Health Care Karanganyar reported to the Kebumen District Health Office that there had been an increase in diarrhea cases in Giripurno Village. An investigation was conducted to identify risk factors, the chain of transmission and to control the outbreak.

## Method

**Methods:** The investigation was conducted by active case finding. Data were collected through interview to the residents by using a standardized questionnaire. Cases were defined as people in Giripurno Village who got diarrhea with/without nausea, vomiting, abdominal pain, and fever in the 2nd week of May in 2023. Laboratory examinations were conducted on water samples taken from 10 houses, 2 natural springs, 1 borehole, 2 PAMSIMAS reservoirs. Data were analysed using a descriptive epidemiological approach based on person, place, and time.

## Results

**Results:** In total 37 diarrhea cases were found with no fatality. The overall attack rate was 12.7%. Cases were mostly female (64.9%) and < 5 years aged (64.9%). The most common clinical symptoms were diarrhea (91.9%), fever (81%), and vomiting (67.6%). The results of water sample examination were 100% contained Total *Coliform* from 40 to 1172 CFU/100 mL and we found *E.Coli* in 4 houses (4 -128 CFU/100mL). The borehole specimen was negative, but the PAMSIMAS reservoir (68 CFU/100 mL) and the natural spring was positive for *E.Coli* (392 CFU/100 mL). The diarrhea was suspected to have originated from contaminated PAMSIMAS because there was no history of communal eating activities involving many people. The contaminated PAMSIMAS was suspected due to wild animal contamination.

## Conclusion

**Conclusion:** There was an outbreak of diarrhea caused by *E-coli* contaminated PAMSIMAS from 6 Mei to 15 Mei 2023. The transmission from PAMSIMAS was suspected due to wild animal contamination. It is necessary to make spring water reservoirs according to standards and chlorination with chlorine diffuser periodically.

## Keywords

**Keywords:** Outbreak, Diarrhea, *Escherichia Coli*, Waterborn Diseases



# **Zoonotic Diseases and Animal Health**

# LEPTOSPIROSIS OUTBREAK IN PANGKEP DISTRICT IN JANUARY-MARCH 2023

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Tuesday, 10th October - 15:30: (Lotus A Ballroom) - Oral

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*Mr. Fransiskus Koda*<sup>1</sup>, *Prof. Ridwan Amiruddin*<sup>1</sup>, *Mr. Tubianto Anang Zulfikar*<sup>2</sup>

*1. Hasanuddin University, 2. Port Health Office of Makassar*

## **Background**

On January 15, 2023, the Pangkep District Health Office received a report of suspected leptospirosis from Pitue Village, Marang Subdistrict. Investigations are carried out to confirm the outbreak, determine risk factors, and control the disease.

## **Method**

The investigation was carried out in March 2023 in 5 subdistricts, using a 1:3 Case-Control study design. Cases 16 person leptospirosis patients who met clinical symptoms, positive leptospirosis RDT examinations. Controls were neighbors of cases who did not suffer and were willing to participate as many as 48 people. Data collection was carried out through interviews using a structured questionnaire and observation of environmental risk factors for the case and control groups.

## **Results**

Leptospirosis was reported in 5 subdistricts of Pangkep District after the floods in December 2022 and February 2023 with the highest distribution of cases being male 15 cases (94%) and age group 45-54 7 cases (43.75%), died 1 case (CFR 6.25%). Analysis of risk factors for foot wounds OR=11.05 (95% CI 2.37–53.58) and the presence of rats in the house OR=4.01 (95% CI 1.04–16.93) are risk factors for leptospirosis. Indoor lighting factor OR=0.68(95% CI 0.18–2.77) and covered garbage disposal OR=0.3(95% CI 0.00–3.2) were not risk factors. The habit of wearing footwear OR=0.06(95% CI 0.01–0.30) is a protective factor against leptospirosis.

## **Conclusion**

Leptospirosis outbreaks occurred in 5 subdistricts in Pangkep District in January-March 2023. There were injuries to the feet or soles of the feet and the presence of rats in the house were risk factors for leptospirosis. The habit of using footwear is a protective factor. Recommendations are getting used to using personal protective equipment (PPE) boots during flood activities, avoiding wound contact with dirty water, and keeping the environment clean to reduce the rat population in the house.

## **Keywords**

**Outbreak, Leptospirosis, Pangkep, Rat, Floods**

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# Determinants of Scabies among a Junior High School Student in Boyolali District, Central Java Province, Indonesia, 2022: a Case-Control Study

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Tuesday, 10th October - 15:45: (Lotus A Ballroom) - Oral

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***Mrs. Anandi Iedha Retnani*<sup>1</sup>, *Ms. Tiara Windy Pratiwi*<sup>1</sup>, *Mr. Teguh Tri Kuncoro*<sup>2</sup>, *Dr. Riris Andono Ahmad*<sup>3</sup>**

*1. FETP Universitas Gadjah Mada, 2. Boyolali District Health Office, 3. Department of Biostatistics, Epidemiology, and Population Health, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada*

## **Background**

There was a reported scabies outbreak in a Junior High School in Boyolali District in October 2022. This study aims to identify scabies risk factors among students.

## **Method**

This is an unmatched case-control study with 1:3 case to control ratio. Cases were students diagnosed with scabies based on clinical signs and symptoms from October 5 to 7, 2022. Controls were students from the same class with no clinical signs and symptoms of scabies. There were 29 cases and 87 healthy students in control. Data on socio-demographic, clinical profiles and risk factors of scabies were collected. Interviews were conducted using a structured questionnaire. *Chi-square* and logistics regression were used to identify the risk factors.

## **Results**

There were 29 cases of scabies from 759 students (Attack Rate 3,9%). The highest attack rate (2,1%) occurred in the lowest class (seventh grade). Additionally, most cases were male (82,8%), with a 12-23 age group (65,5%). All cases reported itchy skin, erythema (41,4%), purulent (24,1%), fever (17,2%) and dizziness (3,5%). Practices like living in a boarding house OR 13,89 (95% CI 4,64-42,56), sharing of bed OR 2,52 (95% CI 0,89-6,88), towel OR 2,62 (95% CI 0,48-13,12) and prayer tool OR 8,25 (95% CI 2,77-24,75) were significant in the bivariate analysis. Multivariate analysis with logistic regression obtained significant variables are living in a boarding house OR 110,39 (95% CI 17,7-686,70), sharing of towel OR 2,03 (95% CI 0,31-13,27) and sharing of prayer tool OR 19,47 (95% CI 4,95-76,67).

## **Conclusion**

Living conditions in boarding houses, towels, and prayer tools sharing were determinants of scabies among Junior High School students. Interventions targeting improving sanitation and hygiene practices in boarding houses should be implemented.

## **Keywords**

Scabies, outbreak, Junior High School, Boyolali

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# Factors Affecting Dog Owner Behaviors Regarding Rabies Prevention in Amed Tourism Area in Karangasem 2022

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Tuesday, 10th October - 16:00: (Lotus A Ballroom) - Oral

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*Mrs. Putu Velyniawati*<sup>1</sup>, *Mr. I Ketut Lanang Dwi Bunda Putra*<sup>2</sup>, *Ms. I Dewa Ayu Bintang Pradnya Dewi*

<sup>2</sup>

*1. Field Epidemiology Training Program (FETP) Universitas Udayana, 2. Udayana University*

## Background

**Background:** Rabies is one of the national prioritized diseases. In 2018 there was 1 human death due to rabies in the Amed Tourism Area, located in Banyuning area. Technical and operational strategies have been implemented to prevent and control rabies, including Program Dharma implementation in the Amed Tourism Area. This study aims to analyze the factors that affect to dog owner's behavior regarding rabies prevention.

## Method

**Methods:** This study uses secondary data of Program Dharma Mapping Results. Program Dharma uses quantitative methods, observational studies with a cross sectional approach. Data was collected using the interview method with a structured questionnaire in the form of a digital application named kobo collect. The research variables are rabies prevention knowledge, behavior, age, sex, income, education, attitude, access to health services, places category, bitten experience and rabies regulation (Official and Traditional). The number of dog owner that used in this study is 1,246 respondents who are distributes across Amed Tourism Area.

## Results

**Results:** The description of rabies prevention behavior in Amed Tourism Area for some respondents is good (48%) and bad (52%). Factors affecting rabies prevention behavior is male (aOR= 1.707; CI 95%= 1.342-2.171; nilai P= <0.001), coastal residence (aOR= 1.707; 95% CI= 1.342-2.171; P value = <0.001) and experience with bitten by dog (aOR = 0.328; 95% CI = 0.147-0.730; P value = 0.006) and rabies regulation (aOR = 3.29; 95% CI = 2.129-5.097; P value = <0.001). The magnitude of the coefficient of determination (R Square) is 0.57 (57%).

## Conclusion

**Conclusion:** The description of rabies prevention behavior in the Amed Tourism Area for some respondents is poor. Factors that affecting rabies prevention behavior in the Amed Tourism Area are male, coastal residence, dog bitten experience and rabies regulations. Increase women participation to prevent rabies, increase the sustainability of vaccination services for dogs, and adopting regulations to eradicate rabies.

## Keywords

**Keywords:** Rabies, prevention, behavior, tourism

**FETP Intermediate**

# The Evaluation of DHF (Dengue Hemorrhagic Fever) Surveillance System Tasikmalaya City, 2023

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Tuesday, 10th October - 15:30: (Lotus B Ballroom) - Oral

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***Mr. Ari Harri Kusmara<sup>1</sup>, Mr. Cecep Heriana<sup>2</sup>***

*1. Dinas Kesehatan Kota Tasikmalaya, 2. Sekolah Tinggi Ilmu Kesehatan Kuningan*

## **Background**

DHF is still a global and national public health problem including West Java Province with an Incidence Rate exceeding the National (47.8/100,000 population). The City of Tasikmalaya has an IR of 270.5 / 100,000 population, a DHF Case Fatality Rate (CFR) of 2.2%, the 2nd highest in West Java and KLB has occurred every year in the last 4 years. KLB events should be prevented if the Surveillance system is implemented well.

## **Method**

Evaluation of this Surveillance System uses a descriptive method. by collecting primary data obtained from interviews using a questionnaire via google form and direct interviews to get in-depth answers from 22 Public Health Center.

## **Results**

From the Input Surveillance System Components obtained officers who have not been trained (17%), multiple tasks (88%), lack of computers (52%) and no operational vehicles (83%) Lack of funds (26%). From the process, officers were unable to process and analyze data (30%), unable to visualize data and make data publications (39%). From the attributes of the surveillance system in terms of the accuracy of the report (83%), in terms of simplicity (86.4%) said the report was simple (84%) and considered it flexible with good data quality as much as (93%).

## **Conclusion**

There is a need to increase capacity by conducting training not only for Surveillance officers but also for leader of Public Health efforts, complete facilities such as computers and operational vehicles and and advocating to increase program funding. Monev must be carried out routinely and bulletins are made as feedback to services and decision makers.

## **Keywords**

Surveillance, DHF, Surveillance Attributes

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# Investigation of Food Poisoning Outbreak in Talikumain Village Rokan Hulu District Riau 2023

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Tuesday, 10th October - 15:45: (Lotus B Ballroom) - Oral

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***Ms. Irma Darmilius<sup>1</sup>, Mr. Rajunitrigo Rajunitrigo<sup>2</sup>, Mr. Said Mardani<sup>3</sup>, Ms. Uthami Syafwati<sup>4</sup>***

*1. District Health Office of Rokan Hulu, Riau Province, 2. Dinas Kesehatan Provinsi Riau, 3. Universitas Indonesia, 4. Tambusai Health Office, Rokan Hulu District, Riau Province*

## **Background**

Food poisoning is a common health issue with a significant impact on public safety. On 4<sup>th</sup> May 2023, seven individuals sought medical treatment at the *Tambusai* Health Center with similar symptoms of nausea, vomiting, and diarrhea after consuming food at a Halal bi-halal event in Talikumain village, Rokan Hulu district. This study aims to analyze the causes of the outbreak of food poisoning.

## **Method**

We conducted a 1:3 case-control study. Cases were individuals who had one or more symptoms such as nausea, abdominal pain, vomiting diarrhea, and weakness after consuming food at the Halal bi-halal event in Talikumain village on May 4<sup>th</sup>, 2023. Controls were individuals who didn't have symptoms of the cases after consuming food at the same Halal bi-halal event in Talikumain village on May 4<sup>th</sup>, 2023, unmatching. Data were collected using questionnaires and subsequently analyzed using univariate and bivariate.

## **Results**

There were 32 cases among the 150 population at risk. The majority of patients were females (87.5%) and 20-44 years old (43.8%). The most clinical symptoms were nausea (90.63%), abdominal pain (62.5%), and vomiting (37.5%). Disease transmission with a common source, with mean incubation of 3 hours (40 minutes to 5 and 30 minutes). The risk factors for food poisoning were shredded chicken (OR= ~, AR ratio 1.64), chili sauce (OR= 5.49, AR ratio 1.28), and cookies (OR= 5.35, AR ratio 1.54). Based on a differential diagnosis, they contain *Staphylococcus Aureus* bacteria. The microbiological examination was not possible due to a lack of available samples.

## **Conclusion**

Consumption of shredded chicken contaminated with *Staphylococcus Aureus* bacteria is a risk factor causing the outbreak of food poisoning. Therefore, efforts to educate food handlers about food safety practices and proper hand hygiene are necessary.

## **Keywords**

case-control, food poisoning, Riau, *staphylococcus aureus*

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# CHARACTERISTICS OF RABIES EXTRAORDINARY INCIDENTS IN THE DISTRICT SOUTH CENTRAL TIMOR IN 2023

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Tuesday, 10th October - 16:00: (Lotus B Ballroom) - Oral

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***Ms. Maria Kelen*<sup>1</sup>, *Mr. Yahya B Bebengu*<sup>2</sup>, *Ms. Agustina Tanusaputra*<sup>3</sup>, *Mr. Roni Bahan*<sup>4</sup>**

*1. NTT Provincial Health Office, FETP Intermediate, 2. Kupang District Health Office, 3. North Central Timor District Health Office, 4. South Central Timor District Health Office*

## **Background**

Rabies is a deadly disease that still occurs in East Nusa Tenggara Province. Entering the beginning of 2023, the first case of rabies was reported on Timor Island, namely in South Central Timor District. As of August, 1,224 dog bites were and 6 deaths rabies cases, a significant increase in cases with an incidence rate of 26.8 per 10,000 population. The aim of this study is to describe the incidence of rabies based on epidemiological variables.

## **Method**

This study is a qualitative study conducted at the South Central of Timor District Health Office, from 17 to 19 August 2023. The data source comes from rabies program reports and surveillance data for 2023. Rabies cases are all sufferers who were bitten by rabid animals with a diagnosis positive for rabies. Distribution of rabies cases includes the number of cases based on distribution area, age, gender, location of bite, time period of bite and death. Collection is carried out by interviews, and secondary data observation. Data analysis was carried out descriptively using Epi Info.

## **Results**

Dog bites have been reported since January 2023, until August 2023, dog bites were reported in 31 out of 32 sub-districts. There were more cases aged 16-60 years or productive age, 241 people. Most cases are male (54%) and *case fatality rate of 0.49%*. The longest incubation period is 16 weeks after being bitten by a dog on the feet and hands. The most cases of bites occurred in the 24th epidemiological week of 2023.

## **Conclusion**

The rabies case in South Central Timor District is the first case in the Mainland Timor region. The number of rabies cases reported was 1,224 bites with a CFR of 0.49%. Continuous advocacy and socialization need to be carried out together across sectors so that people become more concerned about the health of their pets.

## **Keywords**

**Bites, Rabies, South Central Timor**

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# Summary of Diphtheria Immunization-Preventable Disease Case Surveillance (PD3I) in Blitar Regency 2019–2022

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Tuesday, 10th October - 16:15: (Lotus B Ballroom) - Oral

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*Mr. Pebri Panji Guntoro*<sup>1</sup>, *Mr. Fauzi Mansur*<sup>2</sup>

*1. Blitar Regency Health Services, 2. Probolinggo Port Health Office*

## Background

Diphtheria is still a priority problem in Blitar Regency. In 2019, there were 29 cases reported; in 2020, no cases were reported due to the COVID-19 pandemic; in 2021, there were 3 cases; and in 2022, it increased to 10 cases. A summary of surveillance was made to find out the distribution of diphtheria cases in Blitar Regency from 2019 to 2022 based on people, places, and time.

## Method

A descriptive analysis of secondary data that describes case trends based on people, places, and time from 2019 to 2022.

## Results

In 2019, there were 29 cases of diphtheria, 16 men (55%), 13 women (45%) spread at the Srengat Health Center 4 cases (13.79%), Sanankulon 4 cases (13.79%), Wates 3 cases (10.34%), Binangun, Kanigoro, Selopuro, Bacem, and Udanawu, each with 2 cases. Doko, Wlingi, Slumbung, Garum, Ngelegok, Ponggok, and Wonodadi Health Centers each had one case. In 2020, no cases. In 2021, there were 3 cases consisting of 1 man (33%), 2 women (67%) spread at the Srengat Health Center: 2 cases (66.67%), Ponggok: 1 case (33.33%). In 2022, there were 10 cases of men 4 cases (40%), women 6 cases (60%) spread in the Srengat Health Center 5 cases (50%), Garum 3 cases (30%), Kanigoro and Wlingi 1 case each

## Conclusion

The most cases of diphtheria in the last 4 years were in 2019. The Srengat Health Center has the most cases of diphtheria. The incidence rate for 2019 to 2022 is mostly female, with 24 cases (57%), and male, with 18 cases (43%). Based on the age group from 2019 to 2022, most cases are 5–14 years old, 34 cases (80.95%). Recommendations need to improve the diphtheria surveillance system, further diphtheria vaccination for vulnerable age groups, mainly women, and promote community efforts.

## Keywords

Blitar, Diphtheria, PD3I

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NSCE**



# Infectious Diseases

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# First Case Report Of Monkeypox In DKI Jakarta Province, Indonesia

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Tuesday, 10th October - 16:30: (Lotus A Ballroom) - Oral

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***Mr. Mirsal Picasso***<sup>1</sup>, ***Prof. Mondastri Korib Sudaryo***<sup>2</sup>, ***Mrs. Dwi Oktavia***<sup>3</sup>

*1. Field Epidemiology Training Program (FETP), Universitas Indonesia, 2. Faculty of Public Health, University of Indonesia, 3. Dinas Kesehatan Provinsi DKI Jakarta*

## **Background**

Monkeypox is a zoonotic disease caused by the orthopox virus group with a clinical picture similar to smallpox. The initial symptoms of monkeypox are usually fever and lymphadenopathy which are the characteristic of monkeypox. These symptoms are followed by the appearance of maculopapular lesions which develop at different stages. The disease is usually self-limited and the majority of people infected recover within a few weeks (usually 14 to 21 days). Severe clinical symptoms may occur in some individuals, including those with underlying conditions of severe immune disorders. Transmission from human to human can occur through close contact or direct contact with skin lesions of people infected with monkeypox, respiratory fluids/droplets during face-to-face contact or through objects contaminated with monkeypox.

## **Method**

We report the case of a 27-year-old man who was treated with complaints of pimple-like bumps appearing on his face and several other locations. In addition to these lumps, the patient also complained of enlarged lymph nodes and fever.

## **Results**

During the isolation process, the results of the patient's PCR laboratory examination confirmed monkeypox and the patient was given symptomatic treatment, and recovered within two weeks after being confirmed. Four of his close contacts did not show symptoms of monkeypox during the quarantine period. This case is the first confirmation case of monkeypox in DKI Jakarta Province.

## **Conclusion**

This case will increase the awareness of doctors and other health workers in DKI Jakarta Province to improve early detection, isolation and treatment of monkeypox cases in order to break the chain of transmission.

## **Keywords**

Monkeypox, first case, DKI Jakarta Province

# The Association between Depression and Quality of Life of HIV Patients with Antiretroviral Therapy in Bukittinggi at 2023

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Tuesday, 10th October - 16:45: (Lotus A Ballroom) - Oral

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*Ms. Meilisa .<sup>1</sup>, Prof. Ratna Djuwita<sup>1</sup>*

*1. Universitas Indonesia*

## **Background**

The prevalence of depression in HIV patients are 60% of total cases. Depression is the biggest psychosocial problem in HIV patients due to multiple stressor that make patients unable to maintain ARV therapy. HIV patients who are depressed will decrease in quality of life. Study aims to determine relationship between depression and QoL of HIV patients with ARV therapy in Bukittinggi at 2023.

## **Method**

This study used crosssectional study design in Public Health Centre of CST in Bukittinggi from March to May 2023 with sample size of 76 people. Primary data collection used respondent identity questionnaires, BDI – II, and WHOQOL HIV BREF. Data were analyzed univariately, bivariately (person chi square) and multivariately (logistic regression).

## **Results**

Most respondent in the age group > 35 years (51.32%), no partner (72.37%), having a job (59.21%), sexually HIV transmitted (76.32%), no comorbidities (63.16%), CD4 > 350 cells/mm<sup>3</sup> (61.84%) and ART duration ≥ 12 months (51.32%). HIV patients with depression are 60.53%. HIV patients who have a poor QoL are 56.58%. There is a relationship between depression and QoL of HIV patients (p-value <0.05) where depressed patients are at risk of 4.06 times having a poor QoL compared HIV patients who are not depressed after controlling for variables such as age, marital status, HIV transmission and duration of ARV Therapy [PR 4.06 (95% CI 1.06 – 15.40)].

## **Conclusion**

There is a relationship between depression and QoL of HIV patients with ARV therapy in Bukittinggi at 2023. There is a need to strengthen the infrastructure for integrated mental health services across programs and sectors involving the participation of NGOs.

## **Keywords**

*Depression, Quality of Life, HIV*

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# The Effectiveness of Developing Educational Applications and Early Detection of Leprosy (SI-DINI) in the West Ampana Health Center, Tojo Una Una District, Central Sulawesi Province in 2023

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Tuesday, 10th October - 17:00: (Lotus A Ballroom) - Oral

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*Ms. Maspa lapui<sup>1</sup>, Dr. Wahiduddin Wahiduddin<sup>1</sup>, Dr. Ida Leida Maria<sup>1</sup>*

*1. Hasanuddin University*

## **Background**

The prevalence of leprosy in Central Sulawesi in 2021 were reported at 0.95 per 10,000 population. Among the contributing regions, Tojo Una Una Regency ranked as the highest leprosy contributor with a prevalence of 0.96 per 10,000 population. This study aims to assess the effectiveness of the Educational Applications and Early Detection of Leprosy (SI-DINI) in early detection of suspected leprosy spots and its influence in behavior changes towards leprosy.

## **Method**

A mixed-methods design was employed, incorporating qualitative data collection through Focus Group Discussions (FGDs) with health workers at the Ampana Barat Health Center. The data was analyzed using Interpretive Phenomenological Analysis (IPA) techniques. Additionally, a quasi-experimental design with pre and post-test control group was used. The sample consisted of 200 individuals, with 100 assigned to the treatment group and 100 to the control group came. All participants were from the Ampana Village.

## **Results**

Data was collected in 3 months (February to April 2023). The study demonstrated a significant increase in the number of reports of suspected leprosy after a 3-month trial periods (233.33%). A notable, differences in the effectiveness of the leprosy reporting system between the intervention and control groups, particularly in the attributes of simplicity ( $p=0.000$ ), acceptance, ( $p=0.000$ ), data stability and data quality ( $p=0.000$ ). In the aspect of educational, our study also indicated a difference in the average knowledge between intervention and control group after the implementation ( $p=0.000$ ), as well as differences in the post-treatment actions ( $p=0.000$ ) and attitude ( $p=0.000$ ).

## **Conclusion**

The implementation of the SI-DINI application is effectively improved the detection of suspected leprosy spots, enhanced the leprosy reporting system, and induced positive changes in individual behaviors. The study recommends the broad and sustainable adoption of the SI-DINI application by the regional government of Tojo Una-Una regency.

## **Keywords**

Leprosy, Early Detection, Application, SI-DINI

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# Evaluation of HIV Surveillance System in Yogyakarta City 2021-2022

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Tuesday, 10th October - 17:15: (Lotus A Ballroom) - Oral

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*Mrs. Zulfitri Hasan Dalang<sup>1</sup>, Mr. Solikhin Dwi Ramtana<sup>2</sup>, Mrs. Citra Indriani<sup>1</sup>, Mrs. Satiti Retno Pudiati<sup>3</sup>*

*1. Field Epidemiology Training Program (FETP) Universitas Gadjah Mada, 2. Special Region of Yogyakarta City Health Office, 3. Dermatology dan Venerology Department Universitas Gadjah Mada*

## **Background**

Human Immunodeficiency Virus (HIV) infection is a major health problem in Yogyakarta City, which contributes to the highest new cases (32%) in the DI.Yogyakarta Province. HIV surveillance is an effective strategy to control transmission. This study aims to assess the performance of the surveillance system based on the surveillance attributes.

## **Method**

Descriptive quantitative study was conducted in March-April 2023. The subject was interviewed using a structured questionnaire including HIV program officers, outreach workers, and data officers. Simplicity, acceptability, representativeness, timeliness, completeness, and usefulness was measured to know the quality of the surveillance system by percentage.

## **Results**

Surveillance is carried out actively and passively. From 21 subjects, there were no respondents who attended surveillance training, and 90% of them had a double duty. 72% officers stated that the system is not simple, because it needs to wait for laboratory results, the SIHA often cannot be accessed, exported data is not recorded, re-entered clients at each visit, and requires training to operate. Public Health Center (PHC) conducts data analysis in recording and reporting activities (45%). Information use is infrequently (66%), only 5 program officers utilize HIV surveillance information. All PHCs don't send reports on time because input and reporting were conducted at the end of the month, the computer is shared with other units. Data completeness, acceptability, and representativeness are categorized as good (>80%). Routine validation on a monthly based was conducted, budget, facilities, and infrastructure were provided. Surveillance systems can see trends according to time, place and person are strengths in the surveillance system.

## **Conclusion**

The quality of surveillance data is deficient. SIHA updates acceleration to version 2.1 and data analysis should be carried out to generate the HIV information needed to determine appropriate and effective HIV program targets and strategies.

## **Keywords**

Surveillance, HIV, quality, system



# **Respiratory Diseases**

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# Predictive Index of Loss to Follow-Up in TB Patient in The Sidoarjo District, 2022

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Tuesday, 10th October - 16:30: (Lotus B Ballroom) - Oral

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***Mrs. Mira Sistyarningsih<sup>1</sup>, Prof. Chatarina U W<sup>2</sup>, Dr. Muhammad Atoillah Isfandiari<sup>3</sup>, Mr. Supaat Setia Hadi<sup>4</sup>, Ms. Noer Farakhin<sup>1</sup>***

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## **Background**

The loss to follow-up rate for Tuberculosis (TB) patients in Sidoarjo District was 6.9% (limit = 5%). Loss to follow-up increases the risk of clinical worsening, drug resistance, and transmission in the community. This study aims to compile a predictive risk index of loss to follow-up in TB patients in Sidoarjo.

## **Method**

We conducted a case-control study from April to June 2023 in Sidoarjo District. Cases were TB patients treated at hospitals in the Sidoarjo district in 2022 who were declared lost to follow-up. Controls were TB patients treated at hospitals in the Sidoarjo district in 2022 who were declared fully cured. The sampling technique was simple random sampling, with 29 patients in the case group and 58 patients in the control group. Data collection through questionnaire interviews and data analysis using logistic regression tests.

## **Results**

Based on simple logistic regression analysis, nine candidate variables were obtained for the predictive index of loss to follow-up in TB patients (p-value < 0.25), namely age, gender, patient knowledge, patient attitude, access to hospitals, family support, counseling, officer-patient communication, and drug side effects monitoring. Multiple logistic regression analysis of candidate variables resulted in three significant variables: patient knowledge (p-value = 0.174), officer-patient communication (p-value = 0.010), and drug side effect monitoring (p-value = <0.001). Predictive index formula of loss to follow-up in TB patients =  $-1,053 + 2,106 * \text{patient knowledge (less)} + 2,175 * \text{officer-patient communication (less)} + 2,592 * \text{drug side effect monitoring (less)}$ .

## **Conclusion**

Predictive indicators of loss to follow-up in TB patients in Sidoarjo were patient knowledge, officer-patient communication, and monitoring of drug side effects. Officers must be more aware of the risk of lost follow-up in TB patients through preventive efforts such as improving counseling, giving pocketbooks, developing communication with patients, and monitoring TB drug side effects.

## **Keywords**

Tuberculosis, Lost to Follow-Up, Logistic Models, Drug-Related Side Effects and Adverse Reactions

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# Analysis of Risk Factors Associated with Tuberculosis Transmission in the Working Area of Pampang Health Centre, Makassar City Health Office, South Sulawesi Province, 2022

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Tuesday, 10th October - 16:45: (Lotus B Ballroom) - Oral

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**Mr. Bernadus Malisngorar<sup>1</sup>, Dr. A. Arsunan Arsin<sup>2</sup>, Prof. Andi Zulkifli<sup>2</sup>, Prof. Nur Nasry Noor<sup>2</sup>, Prof. Anwar Daud<sup>3</sup>, Dr. Andi Julia Junus<sup>4</sup>**

*1. FETP Students at Universitas Hasanuddin, 2. Hasanuddin University, 3. Department of Health Environment, Faculty of Public Health, Universitas Hasanuddin, 4. South Sulawesi Provincial Health Office*

## Background

Tuberculosis remains a problem in public health, despite the availability of health services and TB drugs. This study was conducted to determine the dominant factors associated with TB transmission in the Panakukang sub-district community, the Puskesmas Pampang Makassar City working area.

## Method

An analytical observational study using a cross-sectional design was conducted with structured interviews and measurements of 290 samples recorded in the TB registry in 2022. The data were analyzed univariately, bivariate, and multivariate.

## Results

According to the study's findings, the respondents who were diagnosed with TB were mostly men (23.5%), in the 15–30 age range (24.7%), with a high school diploma (20.5%), and working in the private sector (15.9%). Level of knowledge ( $p=0.022$ ), close contact ( $p=0.000$ ), mask use ( $p=0.001$ ), occupancy density ( $p=0.000$ ), nutritional status ( $p=0.006$ ), exposure to CO<sub>2</sub> gas ( $p=0.000$ ), and exposure to PM<sub>2.5</sub> dust particles ( $p=0.032$ ) were the factors linked to TB transmission. Personal hygiene was the unrelated factor ( $p=0.177$ ). Further analysis with logistic regression showed that knowledge level (OR=6.2,  $p=0.027$ , CI.1.06-18.85), close contact (OR=673.4,  $p=0.000$ , CI.118.61-3823.40), CO<sub>2</sub> gas exposure (OR=8.35  $p=0.001$ , CI.2.33-29.91) and residential density (OR=14.1,  $p=0.000$ , CI.3.38-59.10) were more significant risk factors for TB transmission with a probability value of 98.2%.

## Conclusion

Knowledge, close contact, CO<sub>2</sub> gas exposure, and densely populated have a probability value of TB incidence of 98.2% where the most dominant risk factor is close contact, so it is necessary to increase education about TB, fulfill adequate nutrition, physical home improvement, and conduct case-contact tracking to avoid missing cases, early detection, supervision and evaluation of taking anti-tuberculosis drugs.

## Keywords

Risk Factors, TB Transmission, Public Health, Puskesmas Pampang

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# Diabetes Mellitus as Predictor of Drug Resistant Tuberculosis Mortality: A Survival Study in Bogor District 2020-2021

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Tuesday, 10th October - 17:00: (Lotus B Ballroom) - Oral

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***Mr. Mohamad Rizaldi*<sup>1</sup>, *Dr. Tri Yunis Miko Wahyono*<sup>2</sup>, *Dr. Dr. dr. Helda, M.Kes*<sup>3</sup>**

*1. Field Epidemiology Training Program (FETP) Universitas Indonesia, 2. Department of Epidemiology, Universitas Indonesia, 3. Universitas Indonesia*

## **Background**

Diabetes Mellitus (DM) is a high prevalence disease and it has an impact on exacerbating TB treatment. TB patients who fail treatment led to Drug Resistant Tuberculosis (DR-TB). DR-TB is a challenge to reach TB elimination globally. Bogor District is one of the main priority areas in Indonesia for TB control with DR-TB confirmed cases 728 (3.3%) in 2020-2021. The study aims to measure the cumulative mortality rate among DR-TB patients, to analyze the survival probability of patient DR-TB with and without DM comorbid, and to determine the relationship between DM and DR-TB survival.

## **Method**

A retrospective cohort study was conducted using Tuberculosis Information System (SITB) data of DR-TB patients that commenced treatment between January 2020 to December 2021 in Bogor District. DR-TB patient with DM was the main exposure and mortality as an outcome. The survival analysis was used to measure the probability of mortality. Cox proportional hazards model was used to determine risk factors for DR-TB mortality.

## **Results**

Total 196 DR-TB patients with mean age of 39 years and 63% were male. Patients with DM comorbid were 26% and 28% had an outcome. The cumulative mortality rate was 28/1000 person-months with a survival probability of 65,2%. There was a difference in mortality rate between patients with and without DM 55/1000 and 20/1000 person-months, and the survival probability is 43,4% and 73,6% (log-rank test 0,0001). DM is a predictor of DR-TB mortality (HR: 1,86; 95% CI:1,05-3,34; p-value: 0,03) controlled by sputum conversion, resistant patterns and age.

## **Conclusion**

DR-TB patients with DM comorbid need to prioritize to get treatment services, ensure their DM was controlled well, compliance to get TB medication, and do follow-up treatment test routinely to know the sputum conversion. The Bogor District Health Office need to improve Monthly Interim Cohort Analysis (MICA) activities.

## **Keywords**

Diabetes Mellitus; Mortality Rate; Drug Resistant Tuberculosis; Survival of DR-TB.

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# Factors influencing cadres in active case finding (ACF) of TB case contacts in Magelang City, 2022.

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Tuesday, 10th October - 17:15: (Lotus B Ballroom) - Oral

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*Mrs. Mija Darwanti*<sup>1</sup>, *Dr. Riris Andono Ahmad*<sup>2</sup>, *Mrs. Risalia Reni Arisanti*<sup>1</sup>, *Mr. Adi Isworo*<sup>1</sup>, *Mr. Safaat Wahyudi*<sup>3</sup>

*1. Field Epidemiology Training Program (FETP) Universitas Gadjah Mada, 2. Department of Biostatistics, Epidemiology, and Population Health, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, 3. Magelang City Health Office*

## Background

In 2022, 269 tuberculosis (TB) cases were found in Magelang city and contact investigation (CI) of TB cases was only 36.7%. The role of cadres is very significant in active TB case tracking. The aims of this study was to analyse the cadres capacities in active case finding of TB case contacts.

## Method

This is a cross sectional study. We interviewed 172 TB cadres in Magelang City. Data on knowledge, stigma, perception, accessibility, social support, and health worker interaction were collected. We conducted bivariate and multivariate logistic regression.

## Results

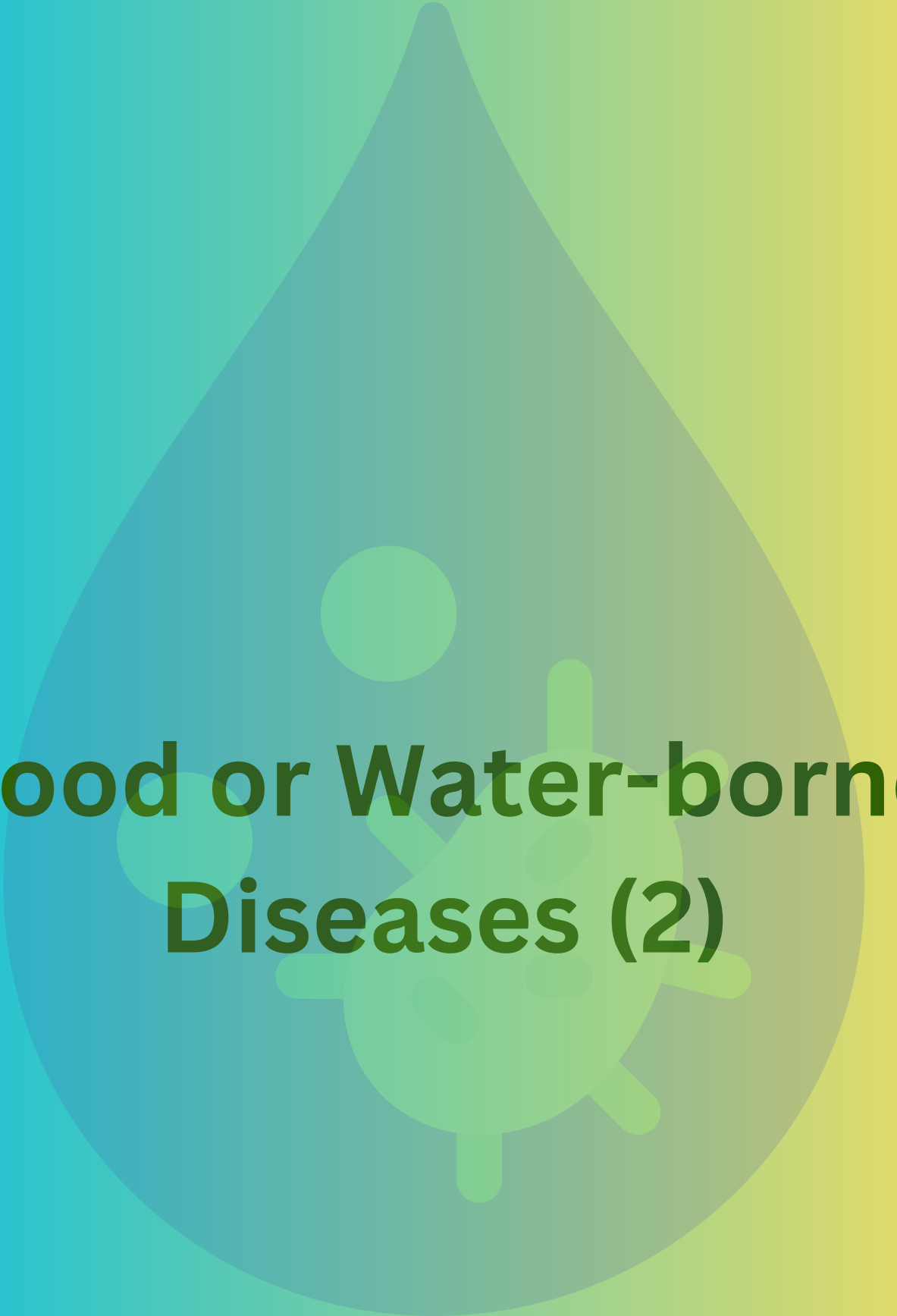
Most of the cadres age group was 51-60 years (45.4%). Majority with high school education (69.8%), 64% were housewives, 63.4% had a tenure of 2-5 years, most of them responsible for more than 3 programs (70.9%). Majority of cadres (54.7%) did not perform CI, 148 cadres (86.1%) had moderate knowledge about TB case CI and, 90 cadres (52.3%) low stigma TB, 94 cadres (54.7%) low perception CI importance, 102 cadres (59.3%) poor interaction in TB case contact finding, 164 cadres (95.4%) reported no barriers in assessing contacts and 139 cadres (80.8%) reported to provide social support to the contacts to do TB diagnosis. The results of multivariate statistical analysis showed that cadres who reported to provide high social support was 2.062 times more likely to conduct TB case CI compared to low social support (PR=2.062; 95%CI=0.935-3.190; p=0.000).

## Conclusion

Social support related to the implementation of TB case contact investigation. We recommended a public health center (PHC) for training on TB case contact investigation and social support for cadres.

## Keywords

Tuberculosis, active case finding (ACF), social support.



# **Food or Water-borne Diseases (2)**

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# Outbreak Investigation of Food Poisoning in Kindergarten and Elementary School Plus Jaryul Ulum Kalipurwo in Kebumen District, January 2023

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Wednesday, 11th October - 13:00: (Lotus A Ballroom) - Oral

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***Ms. Andini Rahmahdhani*<sup>1</sup>, *Mrs. Devvy Herawati Silayuningsih*<sup>1</sup>, *Mrs. Desi Frageti*<sup>2</sup>, *Mr. Akhmad Mukhibin*<sup>2</sup>, *Mr. Bayu Satria Wiratama*<sup>3</sup>**

*1. 1. Field Epidemiology Training Program, Universitas Gadjah Mada, 2. 2. Kebumen District Health Officer, Central Java, Indonesia, 3. FETP Universitas Gadjah Mada*

## **Background**

According to a report from the Kuwarasan Health Center, there were 37 cases where students experienced symptoms of nausea, vomiting, and diarrhea after eating the food that the school provided. Epidemiological investigations are carried out to confirm outbreaks, look for additional cases, identify causes and risk factors, and recommend preventive measures.

## **Method**

This study used a retrospective cohort study. Cases were defined as all students who experienced one or more symptoms of nausea, vomiting, and diarrhea after consuming food distributed by the school on Friday, January 20, 2023. Data was collected through interviews with students, teachers, and food handlers. We also collected data through environmental observations. A food sample was sent to BBTKLPP Yogyakarta. Data were analyzed using chi-squared and multiple binomial regression.

## **Results**

A total of 389 students were interviewed, of whom 68 were identified as cases. The most common symptoms were nausea (94.12%), vomiting (75%), and abdominal pain (47.06%). The higher attack rate was found in females (18.38%), those aged 6 years (60.38%), and those in class 1 (46%). The incubation period ranges from 30 minutes to 3.5 hours, with a median of 2.5 hours. Boiled chicken was suspected as the main cause of outbreaks (aRR = 39.92; 95% CI: 18.15–87.84). Based on symptoms, environmental studies, and results of analysis, *Staphylococcus aureus* was suspected as the cause of the outbreak. Laboratory results do not support this because the conditions are not good. The existence of repeated heating and storage of food at room temperature that was not covered was a factor in outbreaks.

## **Conclusion**

There was a food poisoning outbreak at the school on January 20, 2023, caused by *Staphylococcus aureus*. Health promotion needs to be carried out for food handlers regarding food safety to prevent the recurrence of outbreaks and avoid the possibility of contaminants that can cause harm.

## **Keywords**

Food poisoning, Kindergarten, Elementary school, *Staphylococcus aureus*, Kebumen

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# Food Poisoning Outbreak Investigation in Galagamba Village, Ciwaringin Sub district, Cirebon, September, 2022

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Wednesday, 11th October - 13:15: (Lotus A Ballroom) - Oral

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***Mrs. Masruroh Masruroh*<sup>1</sup>, *Mrs. Ade Nurlina*<sup>2</sup>, *Prof. Mondastri Korib Sudaryo*<sup>3</sup>**

*1. Field Epidemiology Training Program (FETP) University of Indonesia, 2. Cirebon District Health Office, 3. Faculty of Public Health, University of Indonesia*

## **Background**

On September 1, 2022, Cirebon District Health Office received information about presumption of food poisoning from Ciwaringin Public Health Center. The report stated that some person had diarrhea, nausea, vomiting, headache and fever after consumed food from the event in Galagamba Village. The aim of this investigation is to confirm outbreak and assess the risk factor of food poisoning outbreak in Galagamba Village.

## **Method**

We conducted a retrospective cohort study. Data was collected by interview about the symptom, food type, start eating food, and when symptom occur. We also carried out laboratory test of three of five food samples (yellow rice, soy sauce chicken and orek tempe). Risk population were person who ate suspected food of causing poisoning. Cases were person who ate and had one or more symptom of diarrhea, nausea, vomiting, headache or fever. Data analysis used chi-square test with Stata software.

## **Results**

There were 31 food poisoning cases identified with symptoms of fever (74.2%), diarrhea (64.5%), nausea (45.2%), headache (22.6%) and vomiting (16.1%). Most of cases were male (54.8%) and >45 years old (45%). Incubation range was 14 hours to 43 hours. Laboratory results showed that three food samples not contained *Vibrio cholera*, *Salmonella*, *Shigella*, *Staphylococcus aureus*, *E.coli*, *Bacillus cereus* and fungi. Statistical analysis showed that bekakak chicken was significant as risk factor of this outbreak (RR 3.02; 95% CI:1.73-5.26; *p-value*<0.01). Bekakak chicken was not tested because it had run out. *Salmonella* or *E.coli* was suspected as causative agent that contaminated bekakak chicken due to undercooked grilling process.

## **Conclusion**

There has been an outbreak of food poisoning in Galagamba Village due to undercooked grilling process. Risk factor of this outbreak is bekakak chicken that contaminated by *Salmonella* or *E.coli*. We recommend to conduct health promotion regarding proper food processing, food safety and personal hygiene.

## **Keywords**

Food, Poisoning, Outbreak, Investigation

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# Escherichia coli Outbreak Following a Wedding Ceremony in Sentolo, Kulon Progo District, May 2023. A Case Control Study

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Wednesday, 11th October - 13:30: (Lotus A Ballroom) - Oral

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*Ms. YUSNI NURYANTI<sup>1</sup>, Mrs. Yayu Sulastr<sup>1</sup>, Mrs. Rahmad Dewayani<sup>2</sup>, Mrs. Theodola Baning Rahayujati<sup>3</sup>, Mrs. Risalia Reni Arisanti<sup>1</sup>*

*1. Field Epidemiology Training Program (FETP) Universitas Gadjah Mada, 2. Sentolo 1 Health Center, 3. Kulon Progo District Health Office*

## Background

On May 21, surveillance officers from the Kulon Progo district health office (DHO) received a report of 27 suspected food poisoning in the hamlet Wora Wari Sentolo after a wedding ceremony. Our investigation aims to confirm the outbreak, identify the etiology, identify modes transmission, and recommend preventative measures.

## Method

Active case finding was conducted. Case was person who consumed food at a wedding ceremony on May 16, 2023 and have one or more symptoms of diarrhea, abdominal pain, weakness, fever, nausea and vomiting. A 1:1 matched case control study was designed to identify potential risk factors. Interview and observation to the food handler also conducted. Multivariate analysis used to identify foods associated with illness. Stool samples were sent to the laboratory (BLKK Yogyakarta).

## Results

143 people were successfully interviewed from an estimated at-risk population of 800 people. A total 53 cases (AR 37%) and 6 of them hospitalized. The main symptoms were diarrhea (100%) and abdominal pain (100%). Incubation period 21.5-108.5 hours (mean 64 hours), and epidemic curve showed a common source pattern. Highest (95%) attack rate by food were ice cream. According to the results of the multivariate analysis, ice cream was the main risk factor (aOR= 1185.53, 95% CI= 15.72-89352.49). Stool samples positive E.coli pathogen. Keeping raw ingredients (coconut milk) in open refrigerators and processing ice cream adjacent to poultry coops were risk factors that increase the likelihood of outbreaks.

## Conclusion

There was outbreak of food poisoning in Sentolo caused by ice cream contaminated E.coli pathogen due to improper processing and food storage. We recommend DHO and primary health care to promote safety food handling to food handler.

## Keywords

Food poisoning, Outbreaks, Escherichia coli, Ice cream, Food handling

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# Street Foodborne Outbreak in an Islamic Female Boarding House – Bantul District, Indonesia, 2021

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Wednesday, 11th October - 13:45: (Lotus A Ballroom) - Oral

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*Mr. Arik Iskandar*<sup>1</sup>, *Ms. Fitriana Puspitarani*<sup>1</sup>, *Mr. Ahmad Rosadi*<sup>1</sup>, *Mrs. Risalia Reni Arisanti*<sup>2</sup>, *Mr. Samsu Aryanto*<sup>3</sup>

1. Field Epidemiology Training Program (FETP) Universitas Gadjah Mada, 2. UGM, 3. Dinas Kesehatan Kabupaten Bantul

## Background

On November 24, 2021, Imogiri 1 Public Health Center (PHC) reported cases of a suspected foodborne outbreak in a female boarding house after the resident ate street food snacks. The investigation was conducted to ensure the outbreak, identify transmission sources and, risk factors, and also prevention measures

## Method

We conduct the active case finding and cohort retrospective design. The case was a person who experienced one or more symptoms of dizziness, nausea, abdominal pain, vomiting, and diarrhea, after consuming street food snacks during morning break on November 21, 2021. Data were collected with interviews using a standardized questionnaire to food handlers and observation for environmental investigation. Food samples were sent and tested at the provincial laboratory

## Results

47 cases from 218 people were successfully interviewed (AR = 21,6%). All cases have an age range of 11-15 years old. The dizziness, nausea, abdominal pain, and vomiting were the main symptoms. The incubation period was 30 minutes—8 hours, with an average of 5 hours. Almost all snacks with flour as raw material have risks of the outbreak, with the boiled noodle having the highest risk (ARR 12.89, p-value 0.01 95% CI: 1.91-86.87). Samples of dumplings were positive for the Escherichia coli pathogen

## Conclusion

A foodborne outbreak occurred in an Islamic female boarding house on November 21, 2021, due to a street food snack with flour as raw material. Islamic boarding school pupils need to receive hygienic and food safety education from the PHC and the DHO

## Keywords

foodborne, female boarding house,



# FETP Frontline

# Measles Investigation in Banggai Kepulauan District, Central Sulawesi, Indonesia, 2023

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Wednesday, 11th October - 13:00: (Lotus B Ballroom) - Oral

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*Ms. Anggraini Padju<sup>1</sup>, Ms. Nurjanah Nurjanah<sup>2</sup>*

*1. Frontline FETP Partisipant, Salakan Public Health Center, 2. Frontline FETP Mentor, Kamonji Public Health Center Palu City*

## **Background**

Measles is a highly contagious disease caused by a virus in the Paramyxovirus family that can lead to severe complications and death. In June 2023, the case of measles reported in Tinangkung sub-district after three years of zero measles case reporting. The purpose of this study was to conduct an epidemiology investigation in Banggai Kepulauan District.

## **Method**

This was a descriptive study with epidemiological analysis based on time, place, person variables, conducted from June 12<sup>th</sup>-19<sup>th</sup> 2023. Data were collected through interviewing the parents of patient (using investigation form by Ministry of Health), the neighbor, the teacher and observation to the list attendance of classmates during the incubation period.

## **Results**

The reported case in June 2023 was a 12-years-old (Female). The clinical symptoms experienced by cases were fever, rash, cough and headache. Contact tracing was held to the 3 family members, 8 neighbors, 15 classmates and 1 additional case was found (an 8-years-old, Male). Both had a basic and booster complete immunization and no travel history. The treatment based on clinical symptoms, including vitamin A supplementation has been given by doctor in Salakan Primary Health Center. The blood sample has been taken for laboratory test, but the result was not available yet.

## **Conclusion**

The two cases above are clinical cases of measles that are epidemiologically related, namely from family members, so it is recommended to carry out comprehensive case management and contact tracing to prevent complications and limit the transmission of measles in the community.

## **Keywords**

Measles, Investigation, Epidemiology, Sulawesi.

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# RABIES-TRANSMITTING ANIMAL BITE (RTAB) AT SUPER GALAXY PARK, TEMPUREJO VILLAGE, TEMPUREJO SUB-DISTRICT, JEMBER DISTRICT, EAST JAVA, JUNE 2023

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Wednesday, 11th October - 13:15: (Lotus B Ballroom) - Oral

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***Mr. Charisma Chandra*<sup>1</sup>, *Ms. Irma Prasetyowati*<sup>2</sup>**

*1. Tempurejo Public Health Center, Jember District, 2. Fakultas Kesehatan Masyarakat Universitas Jember*

## **Background**

*During the 23rd epidemiological week of June 2023 in the work area of Puskesmas Tempurejo, a case of Rabies Transmission through Animal Bites (RTAB) was discovered after previously experiencing zero reporting. The purpose of this case investigation is to describe the occurrence of RTAB based on epidemiological variables and conduct observations of the environment and the behavior of rabies-transmitting animals to ensure that the RTAB cases are not strongly epidemiologically indicative of Rabies.*

## **Method**

*The case investigation involved interviews and observations. Data collection methods included active and passive approaches. The Data Collection Instrument used was the Rabies epidemiological investigation form. Data analysis was conducted descriptively based on epidemiological variables. Mapping of the residence and radius of mobility of Rabies-Transmitting Animals (RTAs) was performed using the ArcGIS application.*

## **Results**

*The index case was a 4-year-old male from outside the Puskesmas Tempurejo area. The patient's general condition was good. Clinical symptoms included pain at the bite site, weakness, and lethargy, with the wound classified as mild. Case management involved wound cleaning, injection of medication, and antibiotics. The biting animal was a monkey. The location of the bite incident was in Super Galaxy Park, Tempurejo Village. The condition of the RTAs was good, with no unusual animal behavior observed. The living conditions of the animals were good, as they were kept in enclosures with a closed system. Self-hygiene management, feeding management, and enclosure cleanliness management were implemented. However, rabies vaccination had not been administered to all animals.*

## **Conclusion**

*Epidemiological analysis suggests that the cases are not strongly indicative of Rabies. Follow-up on RTAB cases is necessary for early Rabies vigilance. As a preventive measure, the owners of Super Galaxy Tempurejo Park will report to surveillance officers if there is any abnormal behavior, sudden illness, or sudden death among RTAs.*

## **Keywords**

*Case Investigation, Surveillance, Animal Rabies Transmission (ART) Bite, Tempurejo Public Health Center*

# Case Control Study: Outbreak Investigation of Acute Diarrhea in Cilandak, Cinunjang Village, Gunungtanjung Subdistrict, Tasikmalaya District, West Java, 2023

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Wednesday, 11th October - 13:30: (Lotus B Ballroom) - Oral

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***Ms. Risa Sativani*<sup>1</sup>, *Ms. Asih Setiasih*<sup>2</sup>**

*1. Frontline FETP Participant, UPTD Puskesmas Gunungtanjung, Tasikmalaya District, West Java, 2. Frontline FETP Mentor, Regional Health Laboratory of Tasikmalaya City, West Java*

## **Background**

Outbreak investigation was conducted on June 14, 2023 as follow-up to a cluster of acute diarrhea (11 cases) in Cilandak. Outbreak investigation aim to confirm possible causes, risk factors, and mitigation effort.

## **Method**

Case control with 1:1 ratio was conducted. The sample size was 38 (19 cases and 19 controls). The cases are people who have three or more loose stools per day in Cilandak from May 31 to June 15, 2023. The controls are people who had not symptoms of diarrhea, whose address is similar to cases. Data were collected through interviews and observations using the standardized questionnaire. Descriptive analysis was conducted using cross tabulation.

## **Results**

Most of the cases had watery diarrhea 89%, fever 53%, stomachache 42%, and vomiting 31%. The increase in cases occurred on May 31-June 15, 2023 in 2 RT in Cilandak. Most of the cases occurred in toddlers (58%, AR 44%) and women (74%, AR 8.33%). Source of the clean water is unprotected spring. Water is used for drinking (37%) and washed dishes (95%). Other risk factors did not have toilet (85%, OR =2.46) and did not wash hands with soap before eat (90%, OR=1.6). The source of water used for drinking (OR=3.11) and washing dishes (OR=3.37) are the most probable risk factors to cause acute diarrhea. The results of the water examination from the Regional Health Laboratory showed that the water contained fecal coliform and total coliform, that exceeded the threshold.

## **Conclusion**

The probable cause of acute diarrhea is coliform bacteria. Sanitation facilities and behavior are risk factors for acute diarrhea. The supply of clean water from protected sources and the existence of public toilets are essential for the improvement of sanitation facilities. Environmental health inspections need to be improved in accordance with community health behavior implementation.

## **Keywords**

diarrhea, sanitation, clean water, coliform

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# Overview of the Increase Dengue Hemorrhagic Fever (DHF) Cases in RT 2 RW 11 Pegambiran Village, Cirebon City, March - May 2023

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Wednesday, 11th October - 13:45: (Lotus B Ballroom) - Oral

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*Ms. Siska Fiany<sup>1</sup>, Ms. Ade Nurlina<sup>2</sup>*

*1. FETP Frontline, Pegambiran Public Health Office, 2. Cirebon District Health Office*

## **Background**

It is necessary to be aware of an increase in cases of DHF during the changing seasons. In the 10<sup>th</sup> week, DHF cases reported in RT 2 RW 11, Pegambiran village and continued to increase until the 21<sup>st</sup> week. This study aims to provide an epidemiological description of DHF and the factors that influence it and provide recommendations for prevention.

## **Method**

A descriptive study through interviews with DHF cases and families from March until May 2023. The variables collected and analyzed are number of cases per week, symptoms, gender, age and risk factors including daily activities, repellent uses and existence of larvae in the house.

## **Results**

During the March – May 2023, there were 12 cases of DHF with 1 death (Case Fatality Rate: 16.7%). Compared to 2022, there was a three fold increase of DHF cases in RT 02 RW 11. The increase cases started at week 10 with 1 (8.3%) cases and peak at weeks 11 and 12 with 3 (25% respectively) case. All (100%) cases had fever. 8 (67%) were female and the highest Attack Rate (AR) was in the age group 5-14 years (AR: 9.7%). Based on risk factors, 6 (50%) cases had daily activities at home during the period when the mosquito bit, 8 (67%) did not use mosquito repellent, 9 (75%) cases found larvae in the house

## **Conclusion**

The increase of DHF cases occurred during the transition from the rainy season to the dry season. We recommend to public health center must carry out strict surveillance at the location for at least 2 weeks since the last case was found, conduct a rapid DHF test on patients with fever symptoms, carry out eradication of mosquito nests simultaneously in all areas of the Pegambiran village, and form a larva monitor in every house.

## **Keywords**

Dengue Hemorrhagic Fever, Cirebon City

**10<sup>TH</sup>  
NSCE**

A large, semi-transparent silhouette of a woman sitting and holding a child on her lap. The woman is on the left, and the child is on the right, leaning towards her. The background is a gradient from blue on the left to yellow on the right.

# **Maternal and Child Health**

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# Risk Factors for Stunting in Children under five years old in Kebumen Regency, Central Java, 2023

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Wednesday, 11th October - 14:00: (Lotus A Ballroom) - Oral

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***Mr. yusrizal yusrizal*<sup>1</sup>, *Mr. Bayu Satria Wiratama*<sup>2</sup>, *Ms. Emy Huriyati Emy Huriyati*<sup>3</sup>, *Mr. Akhmad Mukhibin*<sup>4</sup>**

*1. Field Epidemiology Training Program, Gadjah Mada University, 2. FETP Universitas Gadjah Mada, 3. Department of Nutrition and Health, Gadjah Mada University, 4. 2. Kebumen District Health Officer, Central Java, Indonesia*

## **Background**

Indonesia still has a high prevalence of *stunting* among children under five years old (U-5), the nutritional status survey for 2022 *stunting* is 21.6% while in Kebumen district is 22.1%. This study aims to determine the prevalence of *stunting* and risk factors for *stunting* in children under five years old in Kebumen District.

## **Method**

This study used a cross-sectional design. The sample size needed was 327 children under five years old. Sampling was done using cluster random sampling. We collected data nutritional status, sociodemographic and environmental data. *Stunting* status was measured by z-score for height for age. Data were analyzed using chi square followed with multiple logistic regression

## **Results**

The prevalence *stunting* among children under five was 19.88%. We also found that most of participants had low family income (66.36%), had exclusive breastfeeding (71.56%) and healthy sanitation (88.46%). The results of logistic regression analysis showed a significant association between low calorie intake (aOR 2.0; 95% CI 1.11-3.65), low birth weight (aOR 2.1; 95% CI 1.08-4.24), and low family income (aOR 2.0; 95% CI 1.06-4.08) with *stunting* among children under five years old.

## **Conclusion**

The prevalence of *stunting* in Kebumen was 19.88%. The risk factors related with *stunting* in Kebumen were low calorie intake, low birth weight (LBW), and low family income. Intervention should be focused on pregnant women. This study also suggest to give supplementation food for children under five to increase their calorie intake.

## **Keywords**

**Keywords:** *Stunting*, Toddlers, risk factors

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# Analysis Of Household And Environmental Determinants With Stunting Incident In Ambon Bay Ambon City In 2023

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Wednesday, 11th October - 14:15: (Lotus A Ballroom) - Oral

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*Mr. Khasrul Tsani Waliulu<sup>1</sup>, Prof. Ridwan Amiruddin<sup>1</sup>, Prof. Andi Zulkifli<sup>1</sup>*

*1. Hasanuddin University*

## Background

The prevalence of stunting among children under five in Maluku province was notably high in 2021, with 21,8% cases in Ambon City and 17,4% cases in Ambon Bay District. The rates remain far from the national target of reducing stunting by 14% in 2024. This study aim to investigate household and environmental determinant associated with stunting in Ambon Bay area

## Method

A case-control design with total sample involved 114 cases of stunting and 114 non-stunting children. Data were sourced from the e-Pencatatan dan Pelaporan Gizi Berbasis Masyarakat (e-PPGBM) at the district health office. Data were analyzed with Chi-Square test, and Multiple Logistic Regression for identifying associated determinant for stunting

## Results

Chi-Square test revealed that mother who had complete ANC with 10T (OR:4,5; 95%CI:1,729–11,969)[SAD(1) , CED (OR:1,9; 95%CI: 1,127–3,372), good parenting style (OR:1,7; 95%CI: 1,015–3,030), giving exclusive breastfeeding (OR:3,8; 95%CI: 2,014–7,470), anemic child (OR:3,3; 95%CI: 1,403–7,992), diarrhea/acute respiratory infection (OR:4,3; 95%CI: 2,302–8,335), parent smoker (OR:4,4; 95%CI: 2,402–8,320), low education (OR:2,4; 95%CI: 1,281–4,727), low income (OR:3,7; 95%CI: 1,790–7,920), poor water quality (OR:2,0; 95%CI: 1,067 – 3,886), and sanitation (OR:2,5; 95%CI: 1,462 – 4,383) is associated with stunting incident. Incomplete immunization history and poor growth monitoring were not associated with stunting. Multiple logistic regression analysis identified complete maternal ANC as the most dominant variable (OR 3,6; 95%CI: 1.29–10.2) after controlling for Exclusive Breastfeeding, recurrent infection with diarrhea and/or ISPA, and smoking

## Conclusion

ANC, CED, parenting style, exclusive breastfeeding, anemia, history of diarrhea/ARI, parents smoker, poor education, low income, poor water quality and sanitation were associated with stunting cases in Ambon Bay. Maternal ANC emerged as the most influential factor after controlling for other variables. Enhancing coordination and collaboration among relevant stakeholders is imperative to implement comprehensive treatment interventions in order to achieved eradication of stunting cases

## Keywords

Antenatal care, stunting, environment, children, nutrition status

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# Evaluation of Maternal Death Surveillance System in Depok City in 2022

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Wednesday, 11th October - 14:30: (Lotus A Ballroom) - Oral

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***Ms. Murti Utami Putri*<sup>1</sup>, *Prof. Asri C Adisasmita*<sup>1</sup>, *Dr. Hidayat Nuh Ghazali Djajuli*<sup>2</sup>**

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## **Background**

Indonesia targets a maternal mortality rate of 183 per 100,000 live births by 2024. There were 24 maternal deaths (MD) in Depok City, which has a population size of 2,490,030 inhabitants, in 2022. This study aims to evaluate the implementation of a maternal death surveillance system (MDSS) to prevent similar MD in the future in Depok City.

## **Method**

This observational study used a descriptive approach and was conducted from April to June 2023. Data were collected by interviewing 2 Persons in Charge (PIC) of Family Health at the Health Office, 13 PICs of Maternal and Child Health at the Health Center, and observing reports related to MD in 2022. Aspects evaluated were surveillance system components and attributes referred to WHO Surveillance System Evaluation and MPDSR Guidelines. Data are presented in tables, graphs, and narratives.

## **Results**

This study found that the implementation of MDSS was not supported by any decree issued by the mayor as the head of the local administrative area. 53% of respondents did not correctly define MD cases. Almost all the respondents (92%) did not have the guideline for MDSS, all health centers had not screened for deaths of women of reproductive age, 80% of maternal verbal autopsy forms were not completed, and 50% of cases are not notified within 1x24 hours. Of the 24 cases, only 6 cases were assessed by the reviewer team at the DHO.

## **Conclusion**

The implementation of MDSS was still far from ideal. By doing the surveillance in such a way, it is hard to expect that the goal of the surveillance will be achieved, that is preventing similar MD in the future. It is important to provide training to health workers on every component of MPDSR and have the local authority issue a decree for MPDSR implementation at the district level.

## **Keywords**

Maternal Mortality, Surveillance, Live Birth, Health Facilities

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# Factors influencing booster immunization completeness and timeliness in children aged 18–24 months in Yogyakarta City, 2023

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Wednesday, 11th October - 14:45: (Lotus A Ballroom) - Oral

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**Mr. Guntur Ari Wibowo**<sup>1</sup>, **Mr. Solikhin Dwi Ramtana**<sup>2</sup>, **Mrs. Citra Indriani**<sup>3</sup>, **Mrs. Mei Neni Sitaresmi**<sup>4</sup>

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## Background

Booster immunization is needed to maintain immunity level in aim to extent the protection period. Booster is targeted to children under two years after completing basic immunization. In 2020, the measles booster immunization (MR2) coverage in Yogyakarta City is 72.1%, below the national target of 76.4%. This study was aimed to determine factors contributes to completeness and timeliness booster immunizations in Yogyakarta City.

## Method

A cross-sectional study was conducted in April to May 2023 to children aged 18-24 months. Two stage cluster sampling was used to select participants. Structured questionnaire was used to obtain information on socio demographic, knowledge, attitude, family support, health worker support, mobility history and adverse event following immunization (AEFI) from parents or caregivers. Log binomial regression was used to calculate risk ratio at 95% confidence interval.

## Results

Overall, 300 children were involved in the study. The parents or caregivers were mostly over 30 years old 195 (65%), 165 (55%) secondary educated, 188 (62.67%) unemployed, 292 (97.33%) knowledgeable, 131 (43.67%) parents showed positive attitudes, support from family supported 266 (88.67%), support provided by health workers supported 118 (39.33%), had no mobility history 294 (98%), had no AEFI history 168 (56%), timely immunization 170 (56.67%), and complete immunization 178 (59.33%).

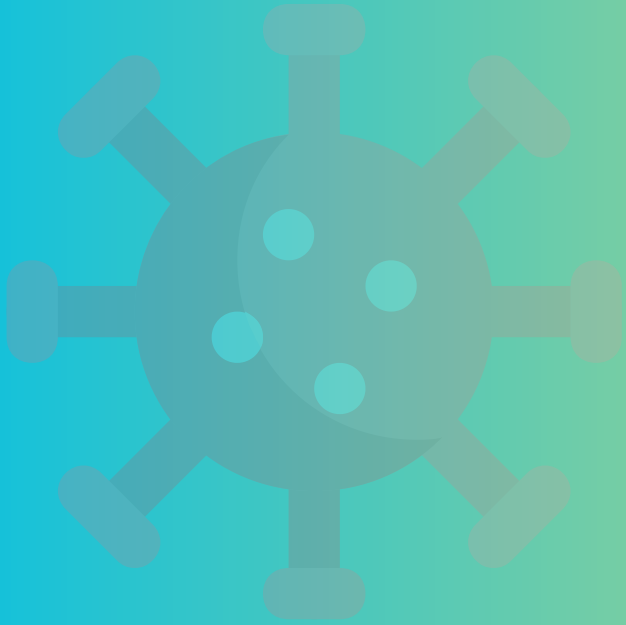
Statistical analysis showed that parents' attitudes (aPR = 1.265\* (95%CI: 1.045-1.531), health worker support (aPR = 1.282\* (95%CI: 1.061-1.548) were associated with immunization timeliness. Health worker support (aPR = 1.237\* (95% CI: 1.032-1.482) was associated with immunization completeness.

## Conclusion

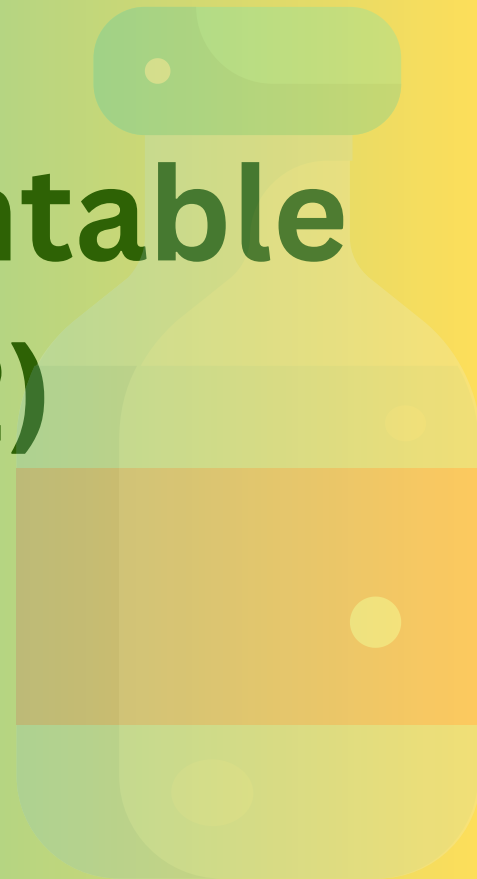
Booster immunization completeness was influenced by health worker support. Booster immunization timeliness was influenced by parents' attitudes and health worker support. To enhance surveillance quality, it is important to increase capacity in immunization management, promotion and education skill for programmers.

## Keywords

Completeness, timeliness, booster immunization.



# **Vaccine Preventable Diseases (2)**



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# The Case-Based Measles Surveillance in Bantul District, Indonesia. A Six Years Review and Zero-Inflated Negative Binomial (ZINB) risk factor analysis.

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Wednesday, 11th October - 14:00: (Lotus B Ballroom) - Oral

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*Ms. Sylvia Gusrina*<sup>1</sup>, *Mr. Bayu Satria Wiratama*<sup>1</sup>, *Mrs. Mei Neni Sitaresmi*<sup>2</sup>, *Mr. Samsu Aryanto*<sup>3</sup>

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## Background

Case-Based Measles Surveillance (CBMS) is a measles-rubella control and prevention elimination strategy. A sensitive and timely case-based surveillance hopefully can detect and isolate cases faster. We describe the detection case spreading from CBMS in each sub-district of Bantul from 2018-2023. This study aims to determine the measles incident rate and analyze spatial risk factors in Bantul, Indonesia, from 2018 to 2023

## Method

This study collects and analyzes secondary data related to CBMS in the Bantul district health office. A descriptive analysis compared CBMS activity from January 2018 until June 2023. The data was obtained from a national reference laboratory in Yogyakarta. Rubella and Measles confirmed cases were based on the result of IgM through ELISA examination. We identify spatial risk factors such as population density, adequate epidemiological investigation (EI), and Measles-Rubella Coverage Vaccination (MRCV) and analyze them with Zero-inflated Negative Binomial (ZINB) regression test

## Results

Of the 810 specimens reported as measles-rubella suspects, 14,9% were measles, and 7.6% were rubella-confirmed cases. The measles Incident Rate (IR) during 2018-2023 were 0.10-6.95 per 100,000 and 2023 was the highest IR year.[1] [2] Most cases happened in high-density areas and low first booster MRCV dose. The multivariable results show that a low first booster MRCV dose (aIRR 4.2; 95% CI 1.64-12.44) and inadequate EI (aIRR 3.5; 95% CI 1.29-10.28) were associated with the MR incidence rate in Bantul.

## Conclusion

The highest measles IR was 6.95 per 100.000 in 2023, five times higher than the previous five years. Low First booster MRCV and inadequate EI were significant risk factors for the high number of measles cases in the Bantul district. The government should maintain vaccination coverage and adequate EI to prevent case escalation

## Keywords

CBMS, Measles-Rubella, Bantul, Zero-inflated Negatif Binomial Regression

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# Analysis Of Immunization Program In Trenggalek District, East Java Province in 2019 - 2021

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Wednesday, 11th October - 14:15: (Lotus B Ballroom) - Oral

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*Mrs. Insharie Arie Sagita*<sup>1</sup>, *Dr. Atik Choirul Hidajah*<sup>1</sup>, *Mr. Antonius Ratgono*<sup>2</sup>

*1. Universitas Airlangga, 2. Dinas Kesehatan Kabupaten Tulungagung*

## Background

The immunization program is aimed to reach herd immunity, is requires high immunization coverage. The coverage of Universal Child Immunization (UCI) at Villages level in Trenggalek District for the period 2019–2021 still has not reached the target (100%), 91.08% in 2019, 92.36% in 2020, and 89.17% in 2021. The objective of this study was to identify the causes of the problem and suggest alternative solutions.

## Method

This observational descriptive study was conducted at the Trenggalek District Health Office in January 2023. Respondents are 17 people (4 officers of the health office who are responsible for immunization program and 13 immunization coordinators from the Puskesmas which in 2019–2021 have not reached the UCI coverage at Village level). Identification of root causes was using a fishbone diagram and determining the priority of root causes to be intervened with using the Capability, Accessibility, Readiness, and Leverage (CARL) method which was done through brainstorming with all respondents.

## Results

There were identified 11 root causes of not achieving the UCI coverage at Village level. The domination factors affecting the root problem was the officers (81.81%). The root problem that received the highest score with the CARL method was the immunization officers have not given communication, information and education to parents optimally. This happened because the officers only focused on the number of targets that must be reached.

## Conclusion

In each Puskesmas, there needs to organize a team that given communication, information and education to assist immunization officers in providing education and information about immunization. The Immunization Officer in the District Health Office needs to monitor and evaluate the immunization services and give the feedback to the Puskesmas periodically.

## Keywords

*Immunization, UCI Village, KIE, Trenggalek*

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# Evaluation of Measles Surveillance System at the Health Office of Blitar City - East Java, 2022.

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Wednesday, 11th October - 14:30: (Lotus B Ballroom) - Oral

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*Ms. Mulyanti Ayu Wulandari Maulana*<sup>1</sup>, *Dr. Atik Choirul Hidajah*<sup>1</sup>, *Mr. Nanang Saifudin*<sup>2</sup>, *Ms. Arina Mufida Ersanti*<sup>1</sup>

1. Universitas Airlangga, 2. Blitar District Health Office

## Background

In 2021, the data completeness and accuracy in the EWARS, as reported by the Blitar City Health Office was 74.4%. This data is considered underreported, potentially causing delayed responses that could escalate case numbers, outbreak duration, and even fatalities. An evaluation of the surveillance system is needed to analyze the quality of the surveillance system implemented in the Blitar City Health Office in 2022 based on research attributes, aiming to formulate appropriate improvement recommendations.

## Method

Measles surveillance system evaluation was conducted in the Blitar City Health Office area in May 2022. Data were collected from the Health Office and all Health Centers (3 Health Centers) through observation, document review, and interviews using a questionnaire adopted from CDC's guidelines with surveillance officers at the Health Office (1 person) and Health Centers (3 individuals). Evaluated attributes were simplicity, acceptability, representativeness, stability, data quality, timelines, PPV, and sensitivity. Descriptive analysis compared results with 2020 measles guidelines and Indonesian Ministry of Health Regulation No. 45 of 2014.

## Results

Surveillance officers in each Health Center were nurses, while the Health Office personnel were health administrators. The system is not yet simple. 50% of the informants faced challenges in case detection and tracking, data analysis, and interpretation due to a lack of measles surveillance training for personnel. 42% of the informants actively participated in measles surveillance activities. Stability and representativeness couldn't be assessed because none of the informants conducted data aggregation and analysis. Sensitivity was at 69%.

## Conclusion

Overall, the utilized measles surveillance system still exhibits considerable weaknesses. This could be attributed to the informants' qualifications not being in the field of epidemiology and the heavy workload of personnel, which still mainly focuses on addressing COVID-19. Therefore, enhancing the capacity of surveillance officers, implementing regular monitoring and evaluation are vital for improving the system's performance.

## Keywords

Evaluation, Surveillance system, Measles, COVID-19, EWARS

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# Evaluation of Early Warning Alert and Respons System (EWARS) for Acute Flaccid Paralysis-in Lhokseumawe , 2022

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Wednesday, 11th October - 14:45: (Lotus B Ballroom) - Oral

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*Ms. Noer Farakhin*<sup>1</sup>, *Ms. Tutik Inayah Susilaningsih*<sup>2</sup>, *Mr. Samuel Pramadisa*<sup>3</sup>, *Dr. Yekti Praptiningsih*<sup>4</sup>, *Dr. Haripurnomo Kushadiwijaya*<sup>5</sup>, *Mr. Frans Yosep Sitepu*<sup>6</sup>, *Mrs. Mira Sistyaningsih*<sup>1</sup>, *Mr. Supaat Setia Hadi*<sup>7</sup>, *Dr. Lucia Yovita Hendrati*<sup>8</sup>

1. Field Epidemiology Training Program, Universitas Airlangga, 2. Field Epidemiology Training Program (FETP) Universitas Gadjah Mada, 3. Field Epidemiology Training Program (FETP) Universitas Udayana, 4. Centers for Disease Control and Prevention, 5. FETP Indonesia, 6. Dinas Kesehatan Provinsi Sumatera Utara, 7. Sidoarjo District Health Office, 8. Department of Epidemiology, Biostatistics, Population Studies, and Health Promotion, Faculty of Public Health, Universitas Airlangga

## Background

Acute Flaccid Paralysis (AFP) surveillance is a key strategy for monitoring the development of polio eradication initiatives. After the polio outbreak in Aceh Province, November 2022, it is important to evaluate the Early Warning and Alert System (EWARS) for Acute Flaccid Paralysis (AFP) to know surveillance implementation in finding suspected cases of polio.

## Method

An observational-descriptive study with an evaluative design was used. We conducted interviews, document reviews, and hospital record reviews on December 11–22, 2022, to obtain the data. The study was conducted by involving surveillance officers at the Lhokseumawe District Health Office, six hospitals, and six public health centers (PHCs). The variables in this study are surveillance attributes including sensitivity, timeliness, data quality, and acceptability. Data were analyzed in percentage and presented narratively.

## Results

A total of thirteen respondent. Most of them (84,6%) were female. Lhokseumawe surveillance officers have not conducted analysis, monitoring and evaluation, routinely. The completeness and timeliness of weekly EWARS are 82.45% and 74.04% respectively. The target of non-polio AFP rate has not been achieved, sensitivity was 0%, and underreported cases were 100%. The AFP surveillance system's timeliness was poor, and data quality was not being achieved due to under-reporting of cases and non-optimal implementation in hospitals and PHCs to capture AFP cases.

## Conclusion

The Early Warning and Alert System (EWARS) for Acute Flaccid Paralysis (AFP) surveillance system in Lhokseumawe city in 2022 has not achieved the attributes of sensitivity, timeliness, data quality, and acceptability. Coordination and advocacy of PHCs surveillance officers have not been well implemented, especially in collaboration between PHCs and their networks, so increased commitment, coordination, and cooperation between officers needs were recommended for control.

## Keywords

AFP, Lhokseumawe, surveillance, EWARS

# Poster Presentations

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# Diphtheria Outbreak in Garut Regency, February-March 2023

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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***Mr. Dwi Chaliq Setiawan*<sup>1</sup>, *Dr. Tri Yunis Miko Wahyono*<sup>2</sup>, *Mrs. drg. Catharina Yekti Praptiningsih*<sup>3</sup>,  
*Mr. Bambang Wulyo Kartika*<sup>4</sup>**

*1. Field Epidemiology Training Program (FETP), Universitas Indonesia, 2. Department of Epidemiology, Universitas Indonesia, 3. U.S. Center for Disease Control and Prevention, Jakarta, 4. FETP Indonesia*

## **Background**

A Diphtheria outbreak was declared by Garut Regency on February 20, 2023 following a report of six children died in Sukahurip Village. An investigation conducted to identify additional cases and to understand the magnitude of the outbreak.

## **Method**

The investigation conducted from February 23 to March 6, 2023. It was started from Sukahurip Village to find any additional cases related to the 6 deaths children. Case definition used was observation case that was a person with symptoms of an upper respiratory tract infection in the outbreak area; suspected case was defined as a person with upper respiratory tract disease (pharynx, larynx, tonsils, and tracheitis) characterized by throat pain or light fever, which accompanied by the presence of a grayish-white pseudomembrane that is difficult to remove and could easily bleeds when removed or manipulated, and confirmed case was a suspected diphtheria case with positive laboratory culture results for toxigenic strains. Interviewed conducted to gather information from the village leaders, cadres and community members.

## **Results**

Total number of death was 9 people. The number of confirmed case, suspected case and observation case was 11, 7 and 43 cases respectively. The cases was found from Sukahurip village and four other additional villages around the Kahuripan. The number of close contact was 816 people. Most of the cases aged 5-15 years old (55%). Majority of the cases has incomplete vaccination status (92.6%).

## **Conclusion**

The diphtheria outbreak in Garut Regency were still on going. It was suggested to applied moving restriction of people living in Kahuripan village and the close contact to avoid further transmission. Provide prophylaxis and conduct massive Outbreak Response Immunization (ORI) to ensure the complete course of vaccination provided or to the people in the affected villages.

## **Keywords**

Diphtheria, Outbreak, Investigation, Garut Regency

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# Epidemiological Features and Risk Factors for Leptospirosis in Bantul District, 2021-2023

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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***Mr. Dessy Arrie Hertanto*<sup>1</sup>, *Mr. Samsu Aryanto*<sup>2</sup>, *Dr. Riris Andono Ahmad*<sup>3</sup>**

*1. FETP Universitas Gadjah Mada, 2. Dinas Kesehatan Kabupaten Bantul, 3. Field Epidemiology Training Program (FETP) Universitas Gadjah Mada*

## **Background**

Leptospirosis is a re-emerging disease that remains problematic in Bantul District. Leptospirosis cases have increased during the past three years. This study aims to describe leptospirosis cases according to the person, place, and time involved and identify risk factors.

## **Method**

The study's design is a descriptive analysis of leptospirosis cases in Bantul Regency from 2021 to 2023. Data were obtained from the district health office's surveillance system. The surveillance system collected data on the diagnosis, demographic data, and other relevant information.

## **Results**

There were 459 leptospirosis cases in Bantul Regency, with 337 cases (73.4%) probable cases and 122 cases suspected cases (26.6%). There were 50 death (10.9%). The majority of cases (92.8%) were without comorbidities. Most of the cases were men (77.6%) between the ages of 46 to 65 (54.7%). There is an increase in cases every year from November to May. Kapanewon Bantul had the highest number of leptospirosis cases, with 52 cases. The most common symptoms were fever (27.5%), muscle aches (22.9%), and nausea (20.3%). Exposure to a risky environment (6.1%), high rat density (4.8%), and the presence of sick people with the same symptoms at work (5.2%) were identified as risk factors. The lack of available data in surveillance system leptospirosis Bantul is a limitation of this study.

## **Conclusion**

Leptospirosis remains a significant public health issue in Bantul Regency. Every year, the pattern of leptospirosis cases remains the same. Further study on risk factors and the incidence of leptospirosis cases, especially regarding people's behaviour in the area, is required to carry out further management.

## **Keywords**

Leptospirosis, CFR, risk factor, Bantul

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# Evaluation of the Tuberculosis Surveillance System in Blitar District Health Office Based on Attributes Surveillance

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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*Mrs. Friwanti Florentji Adel Benu*<sup>1</sup>, *Dr. Muhammad Atoillah Isfandiari*<sup>2</sup>, *Mr. Endro Pramono*<sup>3</sup>

*1. Airlangga University, 2. Universitas Airlangga, 3. Blitar District Health Office*

## Background

One of the indicators successful for the sustainable development goals is to reduce the target tuberculosis incidence and mortality ratio by 90%–95% in 2035. In the Blitar district during 2019–2022, the tuberculosis case detection rate was below the national target. Therefore, it is necessary to support surveillance systems as a prerequisite for providing information as decision-making material. The purpose of this study was to describe the quality of the tuberculosis surveillance system based on surveillance attributes.

## Method

Evaluation descriptive research in Blitar District Health Office was conducted in April–June 2023 with the subject of tuberculosis surveillance systems in 2022. Respondents were tuberculosis surveillance officers in health offices and 18 public health centers. Data collection by interview using a questionnaire and document study using a checklist. Data analysis involves describing the system approach and surveillance attributes compared to existing guidelines. Presentation of data in tables and narratives.

## Results

Evaluation of the tuberculosis surveillance system based on surveillance attributes showed that the system is flexible, has high data quality resulting in valid information, has high sensitivity in detecting the proportion of cases, is timely in data collection, specimen examination and reporting, and has high stability. However, the system is not simple in data processing and analysis (75%), has low acceptability of external networks (94%), low positive predictive value of suspect proportion (4,02%), and is not representative.

## Conclusion

The implementation of the tuberculosis surveillance system at the Blitar District Health Office is mostly well done but requires additional recording and reporting officers, increased coordination with networks to be required to report suspected tuberculosis manually and electronically, and the existence of policies to increase the detection of tuberculosis in children through tuberculosis screening in schools and toddler integrated service posts.

## Keywords

Evaluation, Surveillance System, Tuberculosis, Attributes

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# Alarming Increase Of Hypertension And Risk Factors In Young Adults In Indonesia

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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*Mr. I Wayan Sudarsana Arimbawa*<sup>1</sup>, *Dr. Anak Agung Sagung Sawitri*<sup>1</sup>, *Dr. I Wayan Gede Artawan Eka Putra*<sup>1</sup>

*1. Field Epidemiology Training Program (FETP) Universitas Udayana*

## Background

Hypertension, is the silent killer that is reported to have increased at a younger age globally, but there is lack of information about the progress and magnitude in Indonesia. This study aims to compare the overall and specific prevalence of hypertension in young adults in 2013 and 2018.

## Method

We performed secondary data analysis of Indonesia Basic Health Survey (Riskesdas) on young adult (18–24 years) samples, which is 89.630 (2013) and 85.896 (2018) respondents. Hypertension is defined if the measurement during the survey demonstrated a high blood pressure, have been diagnosed as hypertension by health worker, or are currently taking hypertension medication. Sociodemographic, risk behavior, and health access were defined as possible risk factors for hypertension. We calculated crude and specific prevalence of hypertension based on risk factors for hypertension for each survey period. Data were analysis using a complex sample and weighting accordingly for sampling design and response rate.

## Results

The weighted prevalence of hypertension for young adults in Indonesia in 2013 was 9.7% (95% CI: 9.3–10) and significantly increased to 12.9% (95% CI: 12.6–13.3) in 2018. The majority of hypertension cases were found in data collection rather than result of diagnosed by the health officers. The prevalence of hypertension in both survey periods was consistently greater in men, had low education, and worked and lived in rural areas. In addition, it is also consistently higher in ex-smokers, have high physical activity, often consume foods that are salty, fatty, preserved, seasoned, and instant. Those who have mental and emotional disorders, obese, and have difficult access to health services tend to have a higher prevalence of hypertension.

## Conclusion

The prevalence of hypertension in young adults has tremendously increased in the past five years, as have its risk factors, so it is necessary to control it through health promotion and early detection to improve health status.

## Keywords

hypertension, trend, risks, and young adults

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# Investigation of Measles Outbreak in Nabire District, 2023

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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***Mr. Avelinus Serbianus Nong Erwin*<sup>1</sup>, *Prof. Andi Zulkifli*<sup>1</sup>, *Ms. Mariati Mariati*<sup>2</sup>**

*1. Hasanuddin University, 2. Sinjai District Health Office*

## **Background**

On January 2, 2023, the Nabire District Health Office received a report from Nabire Regional Hospital that there were two suspected cases of measles being treated, further investigations received three new cases, and investigations were carried out to determine risk factors for measles and recommended countermeasures.

## **Method**

Case-control study designed with a ratio of 1: 1, Case is those with clinical symptoms of measles confirmed through laboratory examination or suspect Cases that have not been laboratory-confirmed (40 people) and controls are those who live in the same house or group playing with the case and have no symptoms (40 people). Risk factors observed were Measles-Rubella Immunization Status 1, Measles-Rubella Immunization Status 2, Sex, Vaccination Efficacy, and Measles-Rubella Immunization coverage.

## **Results**

Total cases of 40 cases (16 confirms, 36 suspects) with the highest AR in the sub district Yaro (12.7 /10,000), AR Age highest  $\leq 5$  years (12.5% 10,000) Analysis of Bivariate, Measles-Rubella Immunization Status 1 (OR 39.6; 95% CI, 9.6 -175.5) and Measles-Rubella Immunization Status 2 (OR 65.4; 95% CI,12.0 - 612.3), vaccine efficacy (65%). The results of the document review show that MR immunization coverage in the last 5 years has increased but still  $> 85\%$  from (55.4% in 2019 and 84.2% in 2022)

## **Conclusion**

The cause of the outbreak of measles in Nabire Regency is low Measles-Rubella immunization coverage. Attempts made include Capacity Building of Health Workers related to EWARS and ORI, cross-sector coordination, and giving vitamin A. It is necessary to carry out countermeasures involving related stakeholders, increasing routine immunization coverage, and accelerating the implementation of *Outbreak Response Immunization* to break the chain of transmission.

## **Keywords**

**Disease Outbreaks, Measles, immunization, Nabire**

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# Evaluation of the Tuberculosis Surveillance System in Depok, West Java

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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**Ms. Fitri Aulia<sup>1</sup>, Dr. Dr. dr. Helda, M.Kes<sup>2</sup>, Dr. Hidayat Nuh Ghazali Djajuli<sup>3</sup>**

*1. Field Epidemiology Training Program (FETP), Universitas Indonesia, 2. Universitas Indonesia, 3. Depok City Health Office*

## **Background**

TBC case notification rate (CNR) in Depok is 133 per 100.000 population in 2020. Even though it has a high CNR, Case Detection Rate (CDR) is still under target and it is essential to assess the system's quality. This study aimed to evaluate the implementation of TBC surveillance system based on the structure, core functions, support functions, and attributes.

## **Method**

*This study located in Depok was a descriptive assessment that located in Depok. Data were obtained from TBC reports reported through TBC Surveillance System (SITB) in 2021 and in-depth interviews with 9 TBC officers in Public Health Center and 8 TBC officers in hospitals in Depok. The questionnaire used was based on WHO Guidelines for the monitoring and evaluation of communicable disease surveillance and response systems.*

## **Results**

*The results showed that 59% TBC officers did not know about the legal aspect of TBC surveillance and only 2% of private medical clinics coordinated with Depok Health Department. Besides that, only five people of an index case were investigated and nearly half of TBC cases in hospitals were diagnosed not using rapid molecular tests as recommended by the government. There were a lot of unreported data and the data that had been collected were not analyzed properly. Not all of TBC officers had received TBC surveillance training and most of them hold more than 2 programs. They admitted that the budget for contact investigation was insufficient. It was known that TBC surveillance system was not simple, incomplete, and unacceptable. They also admitted that they did not use the collected data for policymaking.*

## **Conclusion**

*There were problems in almost the surveillance systems aspects. Depok Health Department was expected to have coordination and partnership with KOPI TBC and private sectors, and to do training for TBC officers about TBC surveillance system.*

## **Keywords**

*Attributes, Core function, Support function, Surveillance system structure, TBC surveillance system in Depok.*

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# Coronavirus Disease 2019 Vaccination Program Evaluation - Bantul Regency, 2021

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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*Ms. Fitriana Puspitarani*<sup>1</sup>, *Mr. Samsu Aryanto*<sup>2</sup>, *Dr. Riris Andono Ahmad*<sup>1</sup>

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## **Background**

Bantul Regency is the highest contributor to COVID-19 cases with total confirmed cases 51.765 (33%) of total case in the Special Region of Yogyakarta. To break the chain of transmission of COVID-19, vaccines are one of the last defense efforts to create herd immunity. Evidence-based information is needed to support the COVID-19 vaccination program policymaking. This study aims to evaluate the implementation of the COVID-19 vaccination program in Bantul Regency.

## **Method**

This program evaluation uses a qualitative method, including inputs, processes, and outputs. Data was collected through interviews with questionnaires and observation checklists to 27 primary health centre immunization coordinators and one Bantul District Health Office immunization coordinator. The research was conducted from January to April 2022. The analysis was done descriptively.

## **Results**

The input evaluation showed that the recipients of the COVID-19 vaccination are not clearly defined since there is a data difference of 0.61% to 3.62% between the results reported by the health facility giving the vaccination and the results based on the ID card of Bantul Resident who received the vaccine, making it challenging to calculate the achievements. Operational definitions in logistic records are poorly understood. Corrective mechanisms for vaccine implementer reports are also not carried out. But, there is a support for the input process from good program planning practice and cross-sectoral involvement. In terms of the output aspect, the coverage of all targets has reached the set target of 70%.

## **Conclusion**

The program achievement indicators have met the target, but it is crucial to define the denominator clearly. Regular meetings should be used to correct vaccination implementation reports and refresh the operational definition of logistic records. The further recommendation is to collect data on COVID-19 vaccination coverage in the people of Bantul Regency so that it can be known whether the program's goal of herd immunity has been achieved.

## **Keywords**

program, evaluation, vaccination, COVID-19

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# Food Poisoning Outbreak Investigation In Islamic Boarding School X Kotakulon Bondowoso District of East Java 2023

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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***Mrs. Hari Fitriani*<sup>1</sup>, *Mrs. Friwanti Florentji Adel Benu*<sup>2</sup>, *Ms. Nungki Yuliana*<sup>3</sup>, *Dr. Muhammad Atoillah Isfandiari*<sup>2</sup>, *Mr. Endro Pramono*<sup>4</sup>**

1. Airlangga University, 2. Universitas Airlangga, 3. Bondowoso District Health Office, 4. Blitar District Health Office

## **Background**

Initially 17 female students went to the Kotakulon public health center with symptoms of diarrhea, nausea, vomiting, dizziness, and fever, at the same scene in the Islamic Boarding School after consuming food together. Objectives to get an overview of food poisoning cases and identify the sources of transmission and causes of food poisoning incidents at the Islamic Boarding School X

## **Method**

Using analytic research with a case-control design, data collection techniques are secondary data and questionnaires. The number of subjects studied was 126 cases and 35 controls. taking food leftover samples, drinking water samples, and rectal swabs for examination at the Bondowoso Regional Laboratorium

## **Results**

The outbreak attack rate was (81.6%) in the 11-15 year age group, with a total of 126 cases and 100% were female. The case fatality rate for an outbreak is (0%). The most common symptoms were dizziness (76.2%) and nausea (62.7%). The epidemic curve is in the form of a common source with an incubation period of  $\pm 5$  hours -  $\pm 28$  hours, the peak of cases on July 4 2023 at 04.00-06.59. Types of food that are the most influential risk factors for food poisoning at the Islamic Boarding School X are chili cilok and tofu jigor with OR 36.63 and 12.80 (p-value = 0.00).

## **Conclusion**

The cause of food poisoning based on specific symptoms and the results of laboratory tests on food residue samples and rectal swabs is *Salmonella* and/or *Shigella sp* bacteria. It is suspected that these bacteria contaminate food during food processing or unhygienic food handlers. Food handlers must pay more attention to food safety starting from collecting food ingredients until they are ready for consumption and evaluation for the Foundation to make efforts to renovate kitchen facilities and maintain the cleanliness of toilet facilities

## **Keywords**

Outbreak, Food Poisoning, Investigation Epidemiology, Salmonellosis

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# An outbreak of *Bacillus cereus* (emetic) food poisoning in elementary school, Sleman Regency, Indonesia, 2022: A Cohort Retrospective Study Design

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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## **Background**

On September 9, 2022, a food poisoning outbreak was reported in an elementary school in Sleman Regency during school breaks. The suspected source of food poisoning was snacks that were sold by street vendors around the school. This investigation aims to confirm the outbreak, identify cases and risk factors and source of food poisoning.

## **Method**

We used a cohort retrospective study design with active case findings. The at-risk population was people who consumed snacks from street vendors around the school. Suspected cases were people with one of the symptoms of abdominal pain, nausea, vomiting, and dizziness with or without other symptoms after consuming snacks from street vendors on December 9 2022. Food samples obtained and sent to the local laboratory for bacterial identification. Fisher exact and bivariate analysis tests were performed to explore risk factors for food poisoning.

## **Results**

There were 96 at-risk populations; we identified 16 cases with an Attack Rate (AR) of 17% (16/96). It was found that the AR of cases in females was 22.4% (11/49) and 10.6% (5/47) in males. Symptoms reported were abdominal pain 81.25% (13/16), vomiting 37.5% (6/16), nausea 25% (4/16), dizziness 12.5% (2/16), and diarrhoea 12.5% (2/16). Incubation periods ranged from 15 minutes to 4 hours, with a median of 30 minutes. Consumption of wheat egg snacks with AR 45% (15/33) (RR: 28.6; 95% CI: 3.9-207.3) was significantly associated with food poisoning. The epidemic curve showed a common source of the outbreak. Laboratory tests identified *Bacillus cereus* in wheat egg snacks.

## **Conclusion**

Food poisoning has been confirmed in elementary schools. We suggest giving it to schools for each student to bring their supplies and the District Health Office to guide snack vendors around the school to prevent future outbreaks.

## **Keywords**

School, Food Poisoning, *Bacillus cereus*, Outbreak

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# Evaluation of the Diabetes Mellitus Surveillance System in DKI Jakarta Province in 2023

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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***Ms. Intan Permata Hati Gea*<sup>1</sup>, *Prof. Nurhayati Adnan*<sup>1</sup>, *Mrs. Inggariwati Inggariwati*<sup>2</sup>**

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## **Background**

Globally, the number of diabetes cases in 2021 reached 537 million, with a prevalence of 10.5%. Indonesia Basic Health Research also reported that the prevalence of DM in Indonesia has increased, namely 0.7% (2007), 1.5% (2013), and 2% (2018). The DKI Jakarta Provincial Health Office reported that the DM prevalence in 2020 was 1.37% with 143,877 cases and increased in 2021 by 2.82% with 300,424 cases. The evaluation aims to determine the description of the implementation of Diabetes Mellitus surveillance in DKI Jakarta Province.

## **Method**

The research design is descriptive, with a qualitative and quantitative approach through observation and structured interviews. It ran from April to June 2023. Respondents are the officers of the NCD program at the Health Sub-Office. Public Health Center and the NCD Integrated Service Post cadres, totalling 18 people. The sampling technique used was cluster sampling. Evaluation of the surveillance system in terms of system structure, core functions, support functions, and system attributes based on WHO guidelines.

## **Results**

Aspects of system structure based on networks and partnerships haven't been implemented optimally. There's no specific network with hospitals for routine reporting. The core function based on detection, dissemination, and feedback has been running optimally, while the components of data collection and registration, reporting, analysis, and interpretation of results haven't been optimal. The support functions based on the components of resources, guidebooks, and surveillance facilities haven't been optimal. The system attributes based on the representativeness, timeliness, and usefulness components have been running optimally, but the simplicity, flexibility, acceptability, and completeness components haven't been optimal.

## **Conclusion**

It's necessary to expand the network and partnerships with hospitals and others, change the recording and reporting formats to be simpler, complete the shortage of cadres and guidebooks, computer capacity upgrades, integrate web-based surveillance systems, and conduct training to increase the capacity of recording, reporting, and analysis of surveillance data.

## **Keywords**

Diabetes Mellitus, Surveillance System Evaluation

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# Sensitivity of the 2021 Under Five Pneumonia Surveillance System in Bantul Regency, Assessed Using the Capture-Recapture Method

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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*1. FETP Universitas Gadjah Mada*

## **Background**

The number of pneumonia under five cases in Bantul is still low and has never reached the target, so the burden of pneumonia under five cannot be described properly. Case finding is related to the sensitivity of the surveillance system in detecting and reporting cases. This study aims to measure the sensitivity of under-five pneumonia surveillance using the capture-recapture method.

## **Method**

This is a descriptive study using secondary data from all (27) Public Health Centers and 8 hospitals in Bantul. The hospitals were selected based on the highest number of pneumonia under five cases in 2021. Cases were defined as cases of acute pneumonia in children under the age of five that meet ICD X J12, J13, J14, J15, J16, J17, J18, and P23.9, occurring in 2021. Data were analyzed descriptively using the capture-recapture method.

## **Results**

The number of cases in the hospital reached 898 (88.2%) of the total 992 cases found from both data sources. This number has exceeded the findings of cases of pneumonia under five in the Bantul Health Office ARI Program. The sensitivity of the under-five pneumonia surveillance system at the PHCs, the hospital, and overall were 2.9%, 21.7%, and 23.9%, respectively. This study also found 14 under-five pneumonia deaths, with the majority diagnosed as congenital pneumonia.

## **Conclusion**

The overall sensitivity of under-five pneumonia surveillance in Bantul was 23.9%. It was due to the lack of hospital involvement in under-five pneumonia surveillance in Bantul. Based on this, we suggest involving hospitals in under-five pneumonia surveillance reporting to improve case-finding performance. Congenital pneumonia is the primary cause of death, so the health office should increase studies and interventions related to it.

## **Keywords**

under-five pneumonia; sensitivity; capture recapture

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# Risk Analysis of Pregnancy Outcome in Mothers with Hepatitis B Status in Manggarai Regency

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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## Background

Hepatitis B is an infectious disease which is still a public health problem, affecting morbidity, mortality, public health status, and life expectancy. Hepatitis B infection in pregnant women will increase the risk of maternal/neonatal death, as well as abnormalities in newborns. Manggarai Regency is classified as an area with high hepatitis B endemicity. This study aims to analyze the risk of pregnancy outcomes in mothers with Hepatitis B status in Manggarai Regency.

## Method

This research is a descriptive observational study, using a retrospective cohort study design. This study used secondary data taken from the MCH cohort manual register data. The population in this study were all pregnant women registered at the MCH register at all health centers in the Manggarai Regency, East Nusa Tenggara Province from April 2021 to March 2022 with a total of 5,445 people, with a sample size using the total population. Data were analyzed descriptively and followed by relative risk calculations.

## Results

Pregnant women with hepatitis B positive status have a 1.4 times greater risk of having an abnormal pregnancy outcome compared to pregnant women with hepatitis B negative status. The greatest risk is having an abortion which is 5.4 times greater, then the risk of experiencing asphyxia is 3.9 times greater, the risk of experiencing stillbirth is 3.5 times greater, the risk of experiencing premature birth is 2.6 times greater and the risk of experiencing BLLR is 2.6 times greater.

## Conclusion

The status of pregnant women with hepatitis B increases the risk of abortion, stillbirth, premature birth, LBW, and asphyxia. Pregnant women with hepatitis B status need to be given treatment and closely monitored during pregnancy until delivery through quality ANC services.

## Keywords

Hepatitis B, Pregnant Woman, Pregnancy Outcome, Manggarai

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# Epidemiological Investigation of the First Leptospirosis' Case in Jembrana District, Bali Province, 2023

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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*Ms. Putu Cita Anindika Restudiva<sup>1</sup>, Mr. I Putu Aditya Anggriawan<sup>1</sup>, Ms. Putu Ayu Ascia Zrinathi<sup>1</sup>, Ms. Ni Luh Ayu Sukmawathi<sup>1</sup>, Dr. Anak Agung Sagung Sawitri<sup>1</sup>, Dr. I Made Subrata<sup>1</sup>, Mr. I Wayan Sugihana Aradea<sup>2</sup>, Mr. Putu Dwi Adi<sup>2</sup>*

*1. Field Epidemiology Training Program (FETP) Universitas Udayana, 2. Bali Provincial Government Health Department*

## **Background**

Bali Province never reports leptospirosis cases in humans. However, on 03-24-2023, there was reported one case of leptospirosis in Jembrana District. This study aims to describe the epidemiological investigation of leptospirosis case in Jembrana District.

## **Method**

A case study was performed targeting the house and workplace (Vihara). We carried out verification of case diagnoses, interviewed family and Vihara's manager and observations in the surrounding of the house and Vihara (03-28-2023). Investigation of rats was carried out by set up 100 rat traps (04-05-2023) in the 500 meters surroundings of the Vihara. Subsequently (04-06-2023) rat kidney samples were sent to the BBTCLPP laboratory in Surabaya. Contact tracing investigation for Rapid Diagnostic Testing (RDT) was carried out to identify additional cases (04-06-2023).

## **Results**

The case is man, 48-years-old, work as Vihara's janitor. He experienced fever, nausea, body aches and chest pain, so he was referred to the regional hospital. His condition getting worse, so he was referred to the central general hospital. As the kidney and liver function were increased with anuria, and RDT examination was positive, he was diagnosed as probable leptospirosis. We observed many rats roaming inside the Vihara. The family confirmed that there were often stagnant waters at the Vihara which smells of rat urine and that the patient often cleaned them without personal protective equipment. A total of 12 rats were caught with negative PCR test results (100%). The contact tracing found that 2/4 of the family members and 6/6 of the people in Vihara had all negative RDT results (100%).

## **Conclusion**

The first case of leptospirosis in human has been identified in Jembrana District with occupational and environmental risk factors. We recommend to public health center to do surveillance of leptospirosis cases, monitor hygiene at Vihara and enhancement of public knowledge on occupational health and safety.

## **Keywords**

leptospirosis, zoonosis, rat, Bali, Indonesia

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# Investigation of Pertussis Outbreak in Turikale Sub-District, Turikale Health Center, Maros District In 2022

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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*Ms. Az Zahra Ismail*<sup>1</sup>, *Ms. Yona Patanduk*<sup>1</sup>, *Mrs. Nurjanna Nurjanna*<sup>2</sup>, *Mrs. Sitti Ashlihah*<sup>2</sup>, *Dr. Wahiduddin Wahiduddin*<sup>1</sup>

1. Hasanuddin University, 2. Palopo distict health office

## Background

In 2021 WHO reported around 28,843 cases of pertussis globally. The highest distribution of cases was reported in the West Pacific 10,367 cases. Indonesia in 2021 recorded 12 cases of pertussis. Maros district health office issued a Pertussis outbreak report on July 14 2022 in Turikale sub district, the working area of the Turikale public health center. Three positive cases of non-fatal *Bordetella Pertussis* were reported during the outbreak period. This study aims to obtain an overview of the pertussis outbreak in Turikale District

## Method

Descriptive observational study, active case finding was conducted by reconfirming 3 confirmed cases of Pertussis to get an overview of the outbreak. This research activity was carried out on the 39th week of September 2022. Data were collected using the epidemiological investigation format. In addition, secondary data from Puskesmas Turikale consisting of the weekly outbreak report form reports and chronological reports of cases of pertussis were collected

## Results

This investigation confirmed that there were 3 cases of pertussis outbreaks in Turikale District. The results of the bacteriology laboratory used the PCR method from nasopharyngeal swab specimens verified that these cases was caused by *Bordetella Pertussis*. Attack rate (AR) in men and women was 0.08% and 0.04% respectively. Based on the age group, the highest AR was in the age group 0-4 years with 0.5% followed by 5-9 years with 0.2% AR. Immunization coverage at Puskesmas Turikale in 2021 was 77% for DPT Hb-Hib 1, DPT Hb-Hib 2 were 78%, DPT Hb-Hib 3 were 75%, Advanced DPT of 60%

## Conclusion

An outbreak was confirmed in Turikale District where three cases of pertussis were found in children under 10 years of age. Incomplete DPT immunization coverage is one of the causes of pertussis. An active case finding integrated with the routine immunization program for children with unknown immunization status were crucial to avoid future outbreak.

## Keywords

Bordetella pertussis, outbreak, epidemiological investigation, immunization.

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# Increasing Knowledge and Finding Cases of Influenza Like Illness by Health Cadres at the Cirimekar Health Center, Bogor Regency, West Java Province, Indonesia in 2022

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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## **Background**

*The low reporting of influenza like illness cases in the early alertness and response system, where only 19 out of 101 community health centers in Bogor Regency reporting influenza cases. This study aims to increase the knowledge of health cadres and case finding influenza like illness the Cirimekar Health Center, Bogor Regency, in 2022.*

## **Method**

*The Quasi Experimental study with Nonequivalent Control Group method. The experimental group was conducted at the Cirimekar Health Center and the control group at Klapanunggal Health Center. The study used 74 samples, where 37 samples from each group. The two groups receive different intervention, the experimental group was given an intervention workshop on finding cases while no intervention was given to the control group. Data analysis uses computer statistics applications to see if there were differences in the average knowledge of health cadres and the increased case finding of Influenza-like illness was monitored through the early alert and response system after one month of intervention*

## **Results**

*(1) In the experimental group, there was a difference in the average knowledge of health cadres regard the detection of influenza like illness ( $p\text{-value} \leq 0.05$ ), 73% health candres understanding to the concept of detecting cases in the medium category ( $0.3 \leq \text{NGain} \leq 0.7$ ); in the control group there was no difference knowledge, 97.3% was in the low category ( $\text{NGain} < 0.3$ ). (2) There was an increase case detection in Cirimekar Health Center reported in the early alertness and response system from no reported case to 8 cases.*

## **Conclusion**

*There was an increase in knowledge of health cadres and an increase in the reporting cases influenza like illness in Cirimekar Health Center*

## **Keywords**

*influenza, knowledge, workshops, community health*

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# Epidemiologic Investigation of Rubella Suspects in Boarding Schools in Sleman District 2023

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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*Mrs. Setyaningrum Setyaningrum*<sup>1</sup>, *Ms. Jihan Rizka Syafiya La Moma*<sup>1</sup>, *Mrs. Khoirunnisa Khoirunnisa*<sup>2</sup>, *Mr. Wachid Nur Hidayat*<sup>2</sup>, *Mr. Isa Dharmawidjaja*<sup>2</sup>, *Dr. Vicka Oktaria*<sup>1</sup>

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## Background

On May 23, 2023, the public health center received notification of rubella suspects in 8 students from a boarding school in Sleman Regency who had fever and rash. The investigation aimed to confirm the outbreak, map the distribution of rubella suspects, identify and implement the appropriate control measures.

## Method

A descriptive study with active case findings was performed. Data was obtained by interviewing suspects using an e-questionnaire with Google Forms and secondary data was obtained from boarding schools. Suspects were people who had or had a history of fever and rash or one of them accompanied by cough or runny nose and had an epidemiological relationship with rubella suspects from the period of May 7, 2023, to July 4, 2023. We performed observations in the dormitory to get the description about the students daily habits.

## Results

A total of 324 male students were at risk. There were 257 students interviewed, and 47 were rubella suspects. Sixty-seven students refused to be interviewed. The index case is a sick male student with a travel history and unknown immunization status. The case mostly have rash (87.2%), fever (57.4%), cough (31.9%), and runny nose (27.7%). The highest attack rate was grade 7 at 20.9%, grade 10 at 3.3%, and grade 8 at 1.7%. One of the ten blood samples tested was confirmed for IgM-positive rubella but the immunization status was unknown.

## Conclusion

There was an outbreak of rubella suspects from May 10, 2023, to June 6, 2023 and there was no spread of cases outside the boarding school. Reporting of rubella suspects accelerates the management and control process to prevent further spread. Recommendations are to record the immunization history of students, procedure improvements for students leaving dormitory, and report suspected findings to the public health center.

## Keywords

rubella, school, student, suspect

# Evaluation Of Dengue Hemorrhagic Fever Surveillance System Based On System Approach and Attribute Assessment In Health Department Of Trenggalek Regency East Java Province In 2023

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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*1. Airlangga University, 2. Dinas Kesehatan Kabupaten Tulungagung*

## **Background**

In 2022, there is a difference data in Trenggalek District Health Office between the number of dengue suspects in EWARS system (16 cases) and in DHF control program (1 case). This shows that data as input in surveillance systems is not accurate. The objective of the study was identifying implementation obstacles and assess the quality of the surveillance system in the Trenggalek District Health Office.

## **Method**

Evaluation study was conducted on the DHF surveillance system that implemented in 2022. Informants were DHF program managers and surveillance officers at the Health Office and DHF program managers in 5 selected endemic subdistricts. Data analysis was performed by describing the system components and assessing attributes of surveillance systems and compared with the guidebook of DHF control in 2017, Regulation of Indonesia Ministry of Health No. 45 in 2014, and the Guidelines for Evaluation of the Public Health Surveillance System from CDC.

## **Results**

At the Health Office level and Puskesmas, officers didn't have epidemiology competence that meet requirement. Funds were available, but insufficient for offline training to upgrade the competence of officer. Although Puskesmas sent complete weekly reports, the data was invalid due to a discrepancy between the number of suspected dengue in EWARS and in the DHF control program, the PPV was 42.60%, and Stability was low because almost every month the system was error, High acceptability because the completeness of the EWARS report was 99.54 % and accuracy was 95.86%. The surveillance system was simple because it was easy to operate, and the EWARS reporting timeliness is 95.86%.

## **Conclusion**

In general, the DHF surveillance system is good but there are weaknesses in data quality, PPV, and stability. Therefore, the competence of officers must be increased, the diagnosis must be confirmed for each suspect, and it was necessary to back up data manually.

## **Keywords**

Attributes, DHF, Evaluation, Surveillance System

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# INVESTIGATION OF OUTBREAK OF FOOD POISONING IN SUNGGUMINASA, SOMBA OPU SUBDISTRICT, GOWA DISTRICT ON JULY 18, 2023

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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*1. Hasanuddin University, 2. Soppeng District Health Office*

## **Background**

It was reported that 25 employees of the Gowa District Government experienced stomach pain, diarrhea, headaches, nausea, and vomiting on July 18, 2023, after consuming the food served at a wedding in Sungguminasa. An investigation was carried out to identify the causes of suspected food poisoning by a team from the South Sulawesi Provincial Health Office, Gowa District Health Office, and FETP UNHAS students.

## **Method**

Case-control study design was conducted. Cases were 48 people consuming food, experiencing one or more symptoms of abdominal pain, diarrhea, dizziness/headaches, nausea, and vomiting, while controls were 48 people without symptoms after consuming food. Confirmation of the diagnosis based on clinical symptoms, and information related to risk factors was conducted through interviews using a structured questionnaire.

## **Results**

Based on the investigation, the majority of cases were (56%) women and (35.4%) over 40 years old. Symptoms experienced by cases were 48 (100%) had nausea, 46 (95,8%) had abdominal pain, 48 (93.8%) had vomiting, 41 (85.4%) had diarrhea, and 38 (79.2%) had dizziness/headache. The average incubation period was 2 hours. Disease transmission was the common source. The types of food served are rice, shredded chicken, fried noodles, balado eggs, meatballs, cakes, soup, pickles, crackers, brownies, sponge cakes, fruit ice, and mineral water. The shredded chicken was suspected as the main cause of food poisoning (AR 74.2%, OR 38.33, CI 7.99 – 348.55, and p-value: 0.000).

## **Conclusion**

There was an outbreak of food poisoning in the Sungguminasa. The cause of food poisoning is based on the highest food attack rate and the type of food that has the most statistical effect is shredded chicken. While the cause of food poisoning based on specific symptoms and the results of laboratory tests on food samples lead to escherichia coli, and staphylococcus.

## **Keywords**

**Outbreak, Food Poisoning, Epidemiological Investigation, Gowa**

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# Factors Associated with Tuberculosis Infection in Children in Nagekeo Regency, East Nusa Tenggara Province, Indonesia, 2020-2022

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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Mrs. Rohana Rosmiyati Abdul Karim<sup>1</sup>, Prof. Ratna Djuwita<sup>1</sup>

1. Universitas Indonesia

## Background

Tuberculosis (TB) is a communicable disease that is a major cause of ill health and one of the leading causes of death worldwide. In Indonesia, the increase in the number of TB cases from 2020-2022 is in line with the increase in TB cases in children. An increase in cases of TB in children has also occurred in Nagekeo Regency with a coverage of TB detection in children in 2022, namely 70%. The presence of pediatric TB patients is an indicator of ongoing TB transmission in a community. Children who are in contact with adult TB patients are at high risk of becoming infected with TB. This study aims to determine the factors related to TB infection in children in Nagekeo Regency in 2020- 2022.

## Method

This study used a cross-sectional study design and logistic regression analysis to estimate the risk by utilizing secondary data from the Tuberculosis Information System of the Nagekeo District Health Office. The population in this study were all children who had a history of contact with adult TB patients, and the samples obtained based on inclusion and exclusion criteria were 239 samples.

## Results

Of the 239 children who had a history of contact with TB patients, 5.44% had a history of TB infection. From the results of multivariate analysis, it was found that children  $\leq 5$  years were more at risk of suffering from TB than children  $>5$  years [POR 5.74 (95% CI: 1.66 – 19.85). A history of previous treatment failures is also associated with an increased risk of TB infection in children compared to contacts with new TB patients [POR 5.17 (95% CI: 1.17 – 22.70)].

## Conclusion

Children's age and treatment history of adult TB patients are determinant factors related to TB infection in children in Nagekeo Regency 2020-2022.

## Keywords

Tuberculosis, Children, Infection, Risk factors

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# ANTHRAX OUTBREAK INVESTIGATION IN GUNUNG KIDUL REGENCY, JUNE 2023

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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*Mrs. Siti Sumiana*<sup>1</sup>, *Dr. Riris Andono Ahmad*<sup>2</sup>, *Mr. Dessy Arrie Hertanto*<sup>1</sup>, *Mr. Sidig Hery Sukoco*<sup>3</sup>

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## **Background**

Anthrax is one of the zoonotic diseases of public health concern in Gunung Kidul. On June 2, 2023, the Gunung Kidul District Health Office received a report of suspected anthrax from the hospital. Investigations are conducted to verify the incidence of outbreaks, identify risk factors, and implement interventions.

## **Method**

This study used a 1:1 case-control design. Data was gathered from both primary and secondary sources. Primary sources included epidemiological investigations and systematic interviews with questionnaires. Meanwhile, secondary data comes from medical records at health facilities. Individuals with one or more symptoms of itching, dizziness, coughing, and swollen glands with positive laboratory results are considered cases. The control group is the community connected with sick or dead animals in Brandu's activities in healthy condition.

## **Results**

There were 136 subjects, with 68 subjects each in the case and control groups. Most cases were found in women (54.4%) and the age group of 61-70 (27.9%). Based on multivariate analysis, a significant risk factor was slaughtering of dead cattle (aOR=3.59;95%CI=1.17-11.0). Previously, it was known that the residents of Gunung Kidul practised a "brandu" tradition that involved slaughtering and consuming a dead cow.

## **Conclusion**

After Brandu's activities, there has been an anthrax outbreak in the Semanu sub-district. There is a need for education about the proper brandu traditions so that people are aware of the dangers of eating ill or dead cows. To identify anthrax disease, one must be careful and quick.

## **Keywords**

*anthrax, one health, zoonotic, outbreak, Gunung Kidul*

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# INVESTIGATION REPORT OF OUTBREAK OF PERTUSSIS LUWU DISTRICT YEAR 2023

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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*Mr. syafruddin syafruddin<sup>1</sup>, Prof. Nur Nasry Noor<sup>1</sup>, Mr. Jamaluddin Jamaluddin<sup>2</sup>*

*1. Hasanuddin University, 2. Polewali Mandar District Health Office*

## **Background**

On December 12, 2022, the Luwu District Health Office published the W1 Pertussis outbreak report, with 9 laboratory-confirmed cases and 6 clinically compatible cases. Since 2019-2021 there have been no reports of pertussis cases in Luwu District. The coverage of advanced DPT immunization in the same period has decreased from 72.8% to 54.8%, below the national target of, 93%. An investigation was carried out to determine cause of the outbreak and affected area to prevent a wider spread of cases.

## **Method**

This study used a case-control design carried out by 1 surveillance manager from the District Health Office, 7 community health center officers, and 1 FETP student. Interviews were conducted based on pertussis outbreak guidelines on 15 cases and 45 controls who were the closest neighbors of the case. The research variables included history completeness of immunization, mobility of parents, and the role of parents in health facilities.

## **Results**

Majority of cases were female (53%) and in the age group 4-9 years old (40%). Clinical symptoms experienced include coughing (100%), whooping (60%), red eyes (40%), shortness of breath (40%), and vomiting (40%). The results of the bivariate analysis showed the role of parents in bringing their children to health facilities  $p=0.0352$ ;  $OR= 0.2758$ , 95%: CI: 0.0637-1.095 is a protective factor against pertussis, however it was not statistically significant. Meanwhile the variable of immunization history completeness and mobility of parents is not related to the incidence of pertussis.

## **Conclusion**

There have been outbreaks of pertussis in 7 sub-districts in The Luwu district. The low coverage of follow-up immunization will increase the risk of spreading. It is expected that health workers will educate parents about the importance of continued DPT immunization

## **Keywords**

**Pertussis, outbreak, immunization, protective factor**

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# The Impact of Discussion Method to Increasing Public Awareness Regarding Dengue Fever in Magetan District in 2022

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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Ms. Nurul Alif Khojfah<sup>1</sup>, Mrs. Santi Martini<sup>1</sup>, Mr. Agoes Yudi Purnomo<sup>2</sup>

1. Universitas Airlangga, 2. Magetan Health District

## Background

Dengue Hemorrhagic Fever is caused by the dengue virus and transmitted by *Aedes sp* mosquitoes is an endemic disease in Magetan. Dengue Hemorrhagic Fever is closely linked to the environment and the community, as its occurrence can rapidly and extensively spread in both environmental conditions and community behaviors. Incidence Rate in Magetan District at 2021 is 32,7 by 100.000 population and still had a low Larva Index 88% which is under the national target > 95% due to the ineffectiveness of educational methods, resulting in low awareness among the public about Dengue Hemorrhagic Fever. Community knowledge about this disease had a crucial role in its prevention and control. This study aims to investigate the influence of discussion methods in enhancing community knowledge about Dengue Hemorrhagic Fever.

## Method

The research employs a quantitative analytic approach with a pre-experimental design, utilizing a one-group pre-test post-test research framework. The study is conducted in Soco and Taji villages using a total sampling technique involving 35 participants in Soco and 60 participants in Taji. Data collection is done through a questionnaire containing Dengue Hemorrhagic Fever related statements, with respondents marking correct statements. Data are analyzed using a one-sample T-test to determine the intervention's impact.

## Results

The results show a significant difference with a p-value of 0.000 for both Soco and Taji villages. Knowledge enhancement is evident, with the t-value in Soco pre-test (50.388) being smaller than the post-test value (67.633), and in Taji, the t-value in pre-test (75.139) increases in the post-test (98.124).

## Conclusion

The use of discussion methods to improve knowledge about Dengue Hemorrhagic Fever yields a positive impact on raising awareness and early detection of Dengue Hemorrhagic Fever within the community. This strategy can be adopted for disease prevention and increasing public awareness about Dengue Hemorrhagic Fever.

## Keywords

**DHF, discussion method, education, counseling.**

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# INVESTIGATION OF DHF OUTBREAKS IN MONCONG BORI NEIGHBORHOOD, PANGKEP DISTRICT, SOUTH SULAWESI

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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*Ms. Nurul Iffa Safitri*<sup>1</sup>, *Ms. Sri Inriani*<sup>1</sup>, *Mr. Jamaluddin Jamaluddin*<sup>2</sup>, *Prof. Nur Nasry Noor*<sup>1</sup>

*1. Hasanuddin University, 2. Polewali Mandar District Health Office*

## Background

According to the weekly report (W1) from the Puskesmas Pundata Baji, there was a case of death due to Dengue Haemorrhagic Fever (DHF) in week 21 of 2022 in the Moncong Bori, Pangkep District. Field Epidemiology Training Programme (FETP) students with the Rapid Response Team (RRT) from district health office and primary health care of Pundata Baji, conducted an investigation to confirm the outbreak and obtain a comprehensive understanding of dengue cases transmission in the Moncong Bori.

## Method

A descriptive observational study approach was conducted, encompassing a sample of 15 confirmed DHF. Data was collected through direct interviews using a structured questionnaire. Univariate data analysis was conducted, and the results were presented in the form of tables, graphs, and narratives.

## Results

Predominant clinical symptoms experienced by patients, included fever and positive rumples skin (100%). The majority of patients were female (73.3%), age group 10-24 years (46%). The highest attack rate was among woman at 3.42% with CFR 9.09%. Analysis of the variables indicated that a significant proportion of the respondent had irregularly drained water reservoirs that potential for mosquito breeding place (86.7%), lack of proper waste disposal (60%), and did not use insect repellent during the day (66.7%) although they did use mosquito nets at night (93.3%). Additionally, knowledge related to elimination of mosquito breeding place (Pemberantasan Sarang Nyamuk/PSN) appeared to be in adequate (86.7%). On site mosquito larva examination survey showed that the Free Larvae Index (Angka Bebas Jentik/ ABJ) is 11.4%.

## Conclusion

There has been an outbreak of DHF in Moncong Bori neighborhood, marked by notably increase in epidemiologically significant cases involving people, time, and geographic location, as well as one reported fatality case. It is imperative to enhance routine promotive and preventive activities aimed at eradicating DHF mosquito vector breeding sites in the community.

## Keywords

*DHF, Outbreak, Mosquito, Pangkep*

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# Evaluation of Animal Bite Surveillance System In Transmitting Rabies In Palopo City, South Sulawesi Province 2022

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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*1. Hasanuddin University, 2. Palopo distict health office*

## Background

The CFR for Rabies-Transmitting Animal Bites (GHPR) reaches 99%, the high number of CFR were caused by management of bite cases that were not conducted immediately. Reports of GHPR cases increase from 106 cases in 2021 to 118 cases in 2022. One of the efforts to minimize the risk of death from GHPR is through surveillance activities, therefore this evaluation aims to obtain information on the implementation of a surveillance system for control measures and handling GHPR cases in Palopo City

## Method

The evaluation was carried out in March-April 2023 by conducting interviews using a structured questionnaire and observing report documents involved 1 GHPR surveillance officer at the health office, 12 Public Health Center (PHC) officers in Palopo City as respondent. Data were analyzed by descriptive observational method.

## Results

Based on the legal aspect, 16.7% of officers unaware regarding policies used in controlling GHPR cases, 66.6% networks and partnerships did not run optimally, controlling activity for GHPR cases were only done by Public Health Centers and hospitals. As much as 41.7% of staff never received training, 41.7% staff did not have manuals and 75% works for others program. All operational funds come from APBD/BOK. The availability of VAR at the public health center was 66.7%. Delivery of W2 reports 100%, epidemiological investigation were 83.3%, analysis of interpretation and presentation of data were 75%. All public health center conduct report dissemination regularly. For surveillance system attributes, all officers said it was easy to fill out reports, 83.3% flexibility, 58.3% representation (reports were not based on epidemiological characteristics).

## Conclusion

There are some weakness on GHPR surveillance system in Palopo City, such as untrained officers, officer workload, and monitoring of report submissions. There are needs for staff workload analysis, monitoring of regular report delivery, duplication of the Rabies handbook, as well as cross-sectors/Puskesmas collaboration.

## Keywords

Evaluasi, GHPR, rabies, VAR, surveilans, Palopo

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# The Contribution of Adolescent Pregnancy on the Prevalence of Stunting in Children Aged 0-59 Months in the Bangka Belitung Islands Province in 2021 (Analysis of 2021 SSGI Data)

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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***Mr. Rudini - <sup>1</sup>***

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## **Background**

The stunting prevalence rate in the Bangka Belitung Islands Province was 18.6% in 2021, indicating a significant effort is required to achieve the target of less than 10.38% by 2024. One prominent factor contributing to stunting is adolescent pregnancy. The data concerning adolescent marriages in the Bangka Belitung Islands Province has been consistently rising over the years, reaching 18.76% in 2020. This statistic positioned the province as the highest among all 34 provinces in Indonesia. This study aimed to examine the extent to which adolescent pregnancy contributes to the occurrence of stunting in children aged 0-59 months within the Bangka Belitung Islands Province in the year 2021.

## **Method**

The study utilized a cross-sectional design. The data used in this study comprised a complete sample sourced from the 2021 SSGI in the Bangka Belitung Islands Province, encompassing a total of 2,969 participants. Adolescent Pregnancy is defined as pregnancy occurring at the age of under 19 years, while stunting is recognized as a condition wherein the height or body length at a specific age falling below -2 standard deviations from the WHO standards. The collected data were then analyzed using logistic regression through STATA 13 software.

## **Results**

The results showed that the prevalence of stunting could be reduced by 3.4% if adolescent pregnancy could be controlled. The risk of adolescent pregnancy for stunting in children aged 0-59 months is 1.25 times (95% CI: 0.70 – 2.23) after adjusting for the exclusive breastfeeding variable and the low birth weight (BBLR) variable.

## **Conclusion**

Adolescent pregnancy plays a significant role in shaping and impacting the occurrence of stunting within the Bangka Belitung Islands Province. Addressing this issue requires comprehensive interventions focused on the management of adolescent marriages, encompassing multiple sector such as healthcare, education, religion, and local customs.

## **Keywords**

Adolescents, Cross-sectional, Pregnancy, Stunting

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# Food Poisoning Outbreak in Elementary School in Bantul, Yogyakarta, 2023

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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***Mrs. Triana Wardhani*<sup>1</sup>, *Ms. Andini Rahmahdhani*<sup>2</sup>, *Mrs. elina Chrisniati*<sup>3</sup>, *Mr. Solikhin Dwi Ramtana*<sup>4</sup>, *Mrs. Citra Indriani*<sup>5</sup>**

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## Background

**Background :** On Tuesday 9 May 2023, Bantul Health Office received a notification of possible foodborne outbreak that involved 22 students with upper gastrointestinal symptoms in a class from an elementary school after consuming food at a break time. Investigation was carried out to identify contributing factors related to the outbreak.

## Method

**Methods:** We followed steps for outbreak investigation and carried out retrospective cohort study. We interviewed the 5<sup>th</sup> grade B class students who attended school on 9<sup>th</sup> May 2023. We collected data on age, sex, sign and symptoms, illness onset and food consumption during the break time. A case defined as any student with gastrointestinal symptoms after consuming food that distributed during the break time. We sent leftover food to referral public health laboratory for microbiological examination. Food handler were interviewed and observation was conducted to assess the food hygiene practice and sanitation. Risk ratio was calculated at 95% confidence interval.

## Results

**Investigation results :** We identified 22 cases (attack rate(AR)=85%) from 26 students in 5 B class. The main symptoms were nausea (95.5%), vomiting (77%), abdominal pain (68.2%) with median incubation period was 40 minutes. Epidemic curve showed a common source pattern. Highest attack rate (AR) was found in females (AR=100%). We found ate fried rice and ate jelly has 100% attack rate. Fried rice menu consumption was found to be the risk factor for the illness (RR: 5.8; CI95%: 0.95 -34.4). *Staphylococcus aureus* was identified in fried rice, while *Bacillus cereus* was found in the jelly menu. Food processing area was clean, food handler has a good hygiene and practices during the observation.

## Conclusion

**Conclusion:** Foodborne outbreak was confirmed in the elementary school. Fried rice consumption was found to be risk factor for the illness. Training on food hygiene and practices is needed for parents who will prepared the food for students.

## Keywords

**Keywords:** Foodborne illness, outbreak, *Staphylococcus aureus*, *Bacillus cereus*

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# Analysis of The One House One Jumantik Implementation in Preventing Dengue Haemorrhagic Fever (DHF) in Blitar City 2022

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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*1. Dinas Kesehatan Kota Blitar, 2. Universitas Airlangga*

## **Background**

Blitar City has implemented The One House One Larva Checker (Jumantik). Program in preventing Dengue Hemorrhagic Fever (DHF) since 2017, but has still not been able to achieve the expected larvae-free index target which is the output. It is necessary to analyze program implementation in Blitar City.

## **Method**

This was an observational study using explanatory sequential mixed methods. The research location was village with the highest incidence rate in 2022. In quantitative research, sampling was carried out in multistage sampling, the sample size was determined 444 larva checkers. In qualitative research, 7 informants were determined by purposive sampling.

## **Results**

As the result, the implementation in Blitar City was in accordance with the guidelines. The input component, man aspect were sufficient, but money and material were insufficient, machine for reporting had been routinely carried out using Silantor application. The planning aspect had not been carried out the situation analysis, the organizing aspect had been carried out but an organizational structure had not been created, the actuating aspect that had not been carried out was training, the controlling aspect that had not been carried out were supervision and larva checking crosscheck by Public Health Center (PHC) officers. The output component, obtained a Container Index of 14.54, with containers that were positive for larvae 56.83% were located outside the house and 73.77% were open. The larva free index was 71.39% and there was a significant difference with the larva free index that was entered in Silantor application (93.80%).

## **Conclusion**

Various efforts are needed to improve the program implementation through advocacy to stakeholders, supervision, regular monitoring and evaluation. There is a need for training on jumantik, coaching to initiate innovation, as well as larva checking crosscheck by PHC officers.

## **Keywords**

dengue haemorrhagic fever, larva, cadre, community empowerment

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# DENGUE HEMORRHAGIC FEVER OUTBREAK INVESTIGATION AT SIDOREJO VILLAGE, WONOMULYO DISTRICT, POLEWALI MANDAR DISTRICT, 2022

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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1. Hasanuddin University, 2. Polewali Mandar District Health Office

## Background

The reports of Dengue Hemorrhagic Fever (DHF) cases in Sidorejo village in 2022 increase over 100% compared to the previous year. Furthermore, the Early Warning Alerts and Response (EWARS) report indicates a two-fold increase in reported DHF cases in three consecutive weeks. This investigation aim to confirm the outbreak and determine the risk factors associated to the DHF cases in Sidorejo Village

## Method

An analytic observational study approach with a case-control design was conducted, involved FETP students, Rapid Response Team of the public health center, and District Health Office (DHO). The cases were 19 individuals experienced clinical symptoms and laboratory confirmed cases. Meanwhile, the control were 38 individuals without clinical symptom. Data were collected through interviews using a structured questionnaire. Univariate and bivariate analysis were conducted and presented in form of table and narrative

## Results

Majority of cases were women (63%) and in the 6 – 12 age group (36.84%). Clinical symptoms experience by cases were fever (100%), skin rash (89.67%), reduced appetite and headache (68.42%), bone pain (52.63%), bleeding gums (10.53%), and nosebleeds (5.26%). Bivariate analysis result indicate that significant variables associated to the DHF cases includes not-using mosquito repellants ( $p=0.0027$ ; OR=6.42; 95% CI:1.57-30.9) and the low knowledge of PSN ( $p=0.0070$ ; OR=8.3; 95% CI:1.22-90.2). Variable of proximity to water reservoirs potential for mosquito breeding place ( $p=0.17$ ; OR=3.03; 95% CI:0.53-31.24), proper waste disposal ownership ( $p=0.26$ ; OR=0.53), and habit of using mosquito nets during the day ( $p=0.067$ ; OR=0.144) and night ( $p=0.66$ ; OR=0.75) were not associated with the occurrence of the outbreak

## Conclusion

There was An outbreak of DHF in Sidorejo Village. Significant risk factors are habit of using mosquito repellants and knowledge of PSN. It is recommended that relevant authorities intensify the promotive and preventive action aimed at breaking the DHF infection transmission chain, including eradicating mosquito breeding sites and conducting a comprehensive mapping of potential breeding grounds

## Keywords

*DHF, KLB, Risk Factors, Habits*

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# Risk Factors for Leptospirosis Cases in Kulon Progo District, 2023

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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## Background

Leptospirosis is still a neglected disease in Indonesia. WHO estimates the annual morbidity of leptospirosis in Indonesia at 39,2 per 100.000 people. Leptospirosis cases in Kulon Progo have increased during 2021–2023. The study aims to epidemiologically characterize leptospirosis and its risk factors in Kulon Progo.

## Method

A descriptive analysis was conducted using secondary data from the epidemiological investigations report of leptospirosis in Kulon Progo during January–June 2023, with a total 58 cases. The Leptospirosis Control Technical Guidelines, 2017, defined personal hygiene and behavioral characteristics, as well as certain living and working situations, as leptospirosis risk factors.

## Results

83% cases were male and 33% age group 50-59 years old. 52% as farmers and the most frequent zone is Nanggulan sub-district with 22%. 79% did not use personal protective equipment (PPE) when going to the fields or cleaning livestock pens, and 40% had injuries to their feet or hands. 59% (34 cases) had been exposed to rice fields and irrigation/river within the two weeks preceding the onset of symptoms. The Nanggulan rice field area has the highest percentage of exposure cases (33%). On June 27, 2023, B2P2VRP Salatiga's bacteriology laboratory analysis showed that water and soil samples from the Nanggulan area had DNA that matched the positive control (pathogenic *Leptospira* culture).

## Conclusion

The highest cases of leptospirosis in Kulon Progo district were in males and farmers. Activities in rice fields, irrigation, and rivers without PPE were risk factors for leptospirosis in the Kulon Progo. Integrated environmental surveillance and vector control involving the agriculture and livestock sectors are recommended. Community awareness on hygiene, sanitation, and the practice of PPE as a preventive strategy.

## Keywords

Leptospirosis; risk factors; neglected disease; risk factors; personal protective equipment

# Risk Factors for Measles Outbreaks in the Work Area of the Cikalongkulon Health Center, Cianjur Regency, West Java in February 2023

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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## **Background**

The increasing number of measles suspects from the beginning of 2023 occurred in all regions of Indonesia, including Cianjur district west Java, Cikalongkulon sub district also experienced an increase of measles suspects from in early 2023. Therefore, it is necessary to conduct a case investigation to find out the epidemiological picture and risk factors for increasing measles cases in Cikalongkulon District.

## **Method**

Descriptive epidemiological research design through interviews with parents of measles suspects, examination of blood serum specimens and had their nutritional status assessed.

## **Results**

The total cases were 28, majority of suspects were aged 1-4 years. Based on vaccination status, only 3% had received MR1 (9 months), all cases had not received MR2 (18 months), only 4% had received MR vaccination during the campaign, so only 7% confirmed that received 1 dose. The suspected measles cases spread across 12 villages in close proximity. Most cases were in Gudang Village, with 7 cases, Menteng Sari and Sukagalih with 5 cases each. The three villages were located in close proximity, and 11 other cases were scattered in 9 villages around the 3 villages. Based on the IDL (complete basic immunization) 2022 vaccination coverage, Gudang Village had the lowest coverage at 62.7%. Laboratory examination results showed 3 confirmed cases of measles originating from Gudang, Mentengsari and Kamurang; while, 25 others are still pending. Based on nutritional status, 36% were malnutrition.

## **Conclusion**

There was an outbreak of measles in the Cikalongkulon District in week 8 of 2023. The majority were toddlers who had not received the MR vaccination and lived in clustered areas, toddlers with malnutrition are also a vulnerable group. Villages with low IDL (complete basic immunization) coverage were more at risk of measles transmission. Breaking the chain of transmission can be done by completing the vaccination status of toddlers, isolating patient and improve the nutritional status.

## **Keywords**

outbreak, complete basic immunization, MR immunization, clustered, malnutrition

# EPIDEMIOLOGICAL INVESTIGATION OF CHIKUNGUNYA CASES, PEKANBARU CITY OF RIAU PROVINCE, AUGUST 14 - 17 2023

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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*1. PHEOC Indonesia, 2. Surveillance Unit, Ministry of Health of Indonesia*

## **Background**

On July 29, 2023, a report was received from the SKDR Officer of the Karya Wanita Health Center there were 50 sick people with symptoms similar to chikungunya disease, such as fever, joint pain, rash, nausea and vomiting. Epidemiological investigation was conducted in Limbungan Baru Village RW 06 Rumbai District from August 14 - 17, 2023 by the Karya Perempuan Health Center, Pekanbaru City Health Office, Riau Provincial Health Office, and the Ministry of Health.

## **Method**

The investigation was conducted by interviewing the case house and discussions with Surveillance Officers and Arbovirology Program Officers at the Karya Perempuan Health Center, Pekanbaru City Health Office and Riau Provincial Health Office. Survey for mosquito larva vector was also conducted within a radius of 200 meters from the case's house.

## **Results**

The first case was found on May 28, 2023. The highest case occurred on July 16, 2023, when 10 cases were found. The number of chikungunya cases in Limbungan Baru Village as of August 15 2023 was 104 cases without deaths, with details of 55.7% being female and the majority 32.7% in the age range 27-45 years. Cases had symptoms of fever (100%), arthralgia (96.2%) and rashes (64.4%). Based on survey vector known that flick-free numbers is still below the national target (>95%). The majority of larval habitats in Limbungan Baru Village was found in drums (17%) and in bathtubs (17%). A total of 18 people were successfully taken blood specimens for laboratory examination. The results showed that 5 people (27.7%) were positive for chikungunya.

## **Conclusion**

The increase of chikungunya cases in Pekanbaru City is caused by larval habitats and poor implementation of clean and healthy living behavior. Conducted preventive activities such as as draining, sowing, replacing, covering, and stockpiling is needed to eradicate mosquito nests.

## **Keywords**

Cases, chikungunya, conducted, fever, symptoms

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# Correlation of trend ARI and Pneumonia with Air Quality Index (AQI) in Jabodetabek, 2023

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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*Mr. Moch Thoriq Assegaf Al-Ayubi*<sup>1</sup>, *Mr. Abuchori Abuchori*<sup>2</sup>, *Mr. Dhihram Tenrisau*<sup>3</sup>, *Dr. Triya Novita Dinihari*<sup>4</sup>

1. WHO Indonesia, 2. PHEOC Indonesia, 3. UNICEF Indonesia, 4. Surveillance Unit, Ministry of Health of Indonesia

## Background

The air quality index in Jakarta got national attention with PM 2,5 above 125 consequently in the last three months. Considering the role of DKI Jakarta as a major city with massive commuter mobility from the Jabodetabek agglomeration, the unhealthy AQI will lead as a risk factor for ARI and Pneumonia. This paper aims to analyze the relationship between AQI and trends in respiratory infections (ARI and pneumonia) in the Jabodetabek area in 2023.

## Method

The AQI data used in this research is daily PM 2.5 data for the period 1 January to 13 August 2023. Daily AQI data will be converted into weekly data using the weekly average value. Pneumonia disease trend data was obtained from the EWARS website. The data used is data from the first week to the 32nd week of 2023. The ARI data was obtained from the ARI program work team of the DKI Jakarta Provincial Health Service and is monthly ARI data. Descriptive analysis was conducted by laying out AQI data on trends in pneumonia and ARI. Meanwhile, analytical analysis was conducted by assessing the correlation coefficient value (R) and the determinant coefficient (R<sup>2</sup>).

## Results

Changes in the trend of the average AQI in DKI Jakarta have always been followed by changes in the trend of ARI. The results of the correlation test showed a coefficient correlation (R) value of 0.490 with a determinant coefficient value (R<sup>2</sup>) of 0.240. This shows that 24% of the ARI trend is influenced by changes in AQI values.

## Conclusion

The changes in the AQI score have a significant impact on changes in the trend of ARI in DKI Jakarta and the trend of pneumonia in Jabodetabek. The increase in AQI in the Jabodetabek area in the last 2 months is reflected in the changing trend of respiratory tract infections, namely ARI, and pneumonia.

## Keywords

AQI, ARI, Pollution

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## Special Event: Surveillance of Atypical Progressive Acute Kidney Injury in Indonesia

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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### Background

In August, kidney injury in children was significantly increased related to the unknown etiology released by IPA (Indonesian Pediatrician Association). A comprehensive investigation must be conducted to identify the etiology of the causes by the Ministry of Health and BPOM. This paper aims to identify the surveillance situation of atypical progressive acute kidney injury in Indonesia.

### Method

The Reporting Unit is all Referral Hospitals and City District Health Offices. Recording and reporting are conducted in stages where in the initial period it is conducted through filling out the Gform by the reporting unit. Then the reporting system moved to use an integrated system in the Online Hospital Information System (SIRS Online). Recording and reporting activities consist of several groups of variables: individual characteristics, history of taking medicine and milk (including drug brand and no batch), history of treatment, history of COVID-19, and vaccination. Recording and reporting are conducted if there are case findings with data analysis conducted daily.

### Results

A total of 326 cases (204 deaths; CFR 62.6%) spread across 27 provinces. The majority of cases were stage 3 (59%) and died (62%). After the Afifarma takedown was conducted on October 31, 2022, there was no discovery of AP-AKI. On October 25, 2022, fomepizole was distributed and used in hospitals outside RSCM, and the mortality rate of AP-AKI decreased. Most AP-AKI deaths were in males (61%) and ages 1 - 5 years (70%).

### Conclusion

Recording and reporting activities show an increase in AP-AKI cases with a peak in October. The withdrawal of PT Afifarma's paracetamol product has proven effective in reducing the findings of new cases.

### Keywords

kidney injury, investigation, AKI, Indonesia

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## Special event: surveillance monitoring of cianjur earthquake response, 23 november - 30 december 2022

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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### Background

On November 21-22, 2023, there was an earthquake in Cianjur, West Java with an affected area of 12 districts with an estimated number of refugees of more than 115.000 people. Disaster situations provide their own vulnerability in the transmission of potential outbreaks of disease. Therefore, strengthening activities to record and report potential outbreaks must be conducted as a form of early vigilance and response efforts in disaster situations.

### Method

The implementation of strengthening surveillance in disaster situations is conducted by conducting daily monitoring of potential outbreak diseases, consisting of ARI, diarrhea, gastritis, skin diseases, dengue suspects, COVID-19, measles suspects, and generative diseases such as diabetes mellitus and hypertension. Daily reporting is conducted by 18 Primary Health Centers in areas affected by the earthquake. Reporting is conducted during the emergency response period (November 23 - December 20) and transition period (December 20-30).

### Results

During the emergency response period, the main things that are done are creating a special situation surveillance reporting scheme, coaching, and training reporting units, monitoring, and evaluating daily disease reporting, and strengthening coordination and collaboration with cross-sub-clusters and cross-clusters. We also created a dashboard for monitoring the development of health conditions and illnesses as part of data disclosure during emergency times.

### Conclusion

Recording and reporting activities for potential outbreaks during the Cianjur earthquake emergency response period can run from H + 2 earthquakes with 18 reporting units that consistently conduct daily reporting. Coordination between clusters and sub-clusters is conducted with several orientations: medical access for affected residents, distribution, and management of data across institutions and logistics needs, as well as the allocation of health reserve personnel and volunteers.

### Keywords

earthquake, Cianjur, Surveillance, Disaster

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# EPIDEMIOLOGICAL INVESTIGATION OF MYSTERIOUS DEATH ON CHILDREN IN GARUT DISTRICT, WEST JAVA 2023

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Wednesday, 11th October - 10:15: (Pre-Function Hall of Lotus Ballroom) - Poster

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## **Background**

On 8 February 2023, the Ministry of Health of Indonesia received a report through EBS SKDR about mysterious death of 6 children in Sukahurip Village, Pangatikan Subdistrict, Garut within a period of approximately 30 days, with symptoms: sore throat, dispnea, disfagia and stridor. Ministry of Health, Provincial Health Office, District Health Office and related cross-sectrors and cross-programs conducted epidemiological investigation.

## **Method**

This is a descriptive investigation with a case study approach on 13-16 February 2023. Carried out a comprehensive investigation to assess the possible epidemiological relationship between deaths, collected supporting data by conducting interviews with case families, taking throat specimens from symptomatic close contacts and sent to the regional laboratory of West Java Province.

## **Results**

This investigation succeeded in identifying 18 close contacts from 6 mysterious death cases with details, 6 people having symptoms of disfagia and sore throat. This symptoms also found in 6 mysterious death cases. Based on consultation with the diphtheria expert team, 2 out of 6 people having symptoms matched the criteria for suspected diphtheria. Specimen were examined for 6 people having symptoms and 2 of them were positive for diphtheria. Late detection and incompleted immunization also found both 18 close contact and 6 death cases.

## **Conclusion**

The mysterious deaths of 6 children in Sukahurip Village match the criteria and indicated to diphtheria transmission. Provincial Health Office and District Health Office have to increase sensitivity in case detection by conducting throat examinations on all ARI cases to ensuring pseudomembranes, ensure the coverage of complete basic immunization for all children in Sukahurip Village, carrying out catch-up immunization or ORI is necessary and rigorous surveillance is needed to detect new cases.

## **Keywords**

Death, diphtheria, health, suspect



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