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PROCEEDINGS OF THE 2ND INTERNATIONAL SYMPOSIUM OF PUBLIC HEALTH

Achieving SDGs in South East Asia: Challenging and Tackling of Tropical Health Problems

Editors:
I Wayan Gede Artawan Eka Putra
Agung Dwi Laksono
Yulis Setiya Dewi
Nikmatur Rohmah and
Darrimiya Hidayati

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Organized by
Faculty of Public Health, Universitas Airlangga

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BRIEF CONTENTS

ORGANIZING COMMITTEES IV

PROGRAM COMMITTEE VII

FOREWORD IX

CONTENTS XI

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Agustina Abuk Seran, Politeknik Kesehatan Kemenkes Kupang, Indonesia

Rahayu Listianingsih, Universitas Airlangga, Indonesia

FOREWORD

The point of Sustainable Development Goals (SDGs) has been determined in the consistent meeting in all countries. The health sector position is one of the key components in achieving the indicators. Special attention to the health sector focuses on community nutrition, national health systems, access to reproductive health and family planning and sanitation and clean water.

Based on that, Southeast Asian countries are seen as important part in formulating strategic and policy efforts to improve the effectiveness and efficiency of achieving the various goals of the SDGs. Therefore, the Doctoral Program of Health Science, Faculty of Public Health, Universitas Airlangga held The 2nd International Symposium of Public Health. This remarkable event is in collaboration with Faculty of Medicine, Widya Mandala Catholic University Surabaya and Magister Program of Public Health, Jember University. It's an honour to present **"Achieving SDGs in South East Asia: Challenging and Tackling of Tropical Health Problems"**.

We have tried to give our best contributing of our knowledge in the field of public health especially our contribution to help the problems on tropical health, health equity and quality of health care, clinical and community relationship to enhance public health, emerging and re-emerging diseases, nutrition-enhancing as strategic investment, global strategy framework for food security and nutrition, environmental and occupational health and mental health for achieving SDGs in South East Asia.

The aim of this symposium is to disseminate knowledge and share it to the public, especially in the scientific community, such as academics and practitioners in the field of health. The symposium focusing on formulation of policy recommendations for related parties to accelerate the achievement of the target of SDGs in the field of health. The results of this symposium are also expected to be an input for policy makers, from various levels in formulating programs to accelerate the SDGs goals' achievement. This international symposium will help us, to grasp and share more knowledge especially in public health science.

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

I am looking forward to seeing you at ISoPH in the near future.

Rachmad Suhanda
Chairman of the Committee

CONTENTS

PAPERS

FULL PAPERS

Analysis of Predisposing, Enabling and Reinforcing Factors Against Breast-Self Examination (BSE) Behavior 5
Febri Endra Budi Setyawan

The Effect of Pumice Stone Media in Reducing Pollutant Load in Grey Water by Using Anaerobic Biofilter 10
Muhammad Al Kholif and Muhamad Abdul Jumali

The Performance of Algae-Bacteria to Improve The Degree of Environmental Health 17
Rhenny Ratnawati, Indah Nurhayati and Sugito

Children Under Five Pneumonia Vulnerability Zone Based on House Physical Determinant Factors Using Geographical Information System Approach in Sawahlunto City 24
Masrizal, Riska Arini Rusdi and Onetusfifsi Putra

Effectiveness of F75 and Positive Deviance Towards Weight Increase in Children Under Five With Malnutrition 31
Indria Nuraini, Nyna Puspita Ningrum and Setiawandari

Analysis Of Marketing Strategy And Marketing Mix On New Patient Visit Of Specialistic Polyclinic 37
Muhadi and Winda Lusia

Social Support, Types of Personality, Workload, and Responsibility Become Job Stressors for Hospital Based-Nurses 41
Laela Hasanah, Laili Rahayuwati and Kurniawan Yudianto

Hazardous Waste Identification and Management at Fire Assay Laboratory Based on Indonesian Government Regulation 46
Arif Susanto, Edi K Putro and Purwanto Purwanto

Severely Underweight Determinants of Children Under Five 52
Rr. Vita Nur Latif, Teguh Irawan and Wahyuningsih

Increase of Monooxygenase Activity in Aedes Aegypti Population in Kedungwuni Timur Subdistrict Pekalongan Regency 59
Nor Istiqomah, Jaya Maulana and Suharti

The Relationship of Performance Expectancy, Effort Expectancy, and Social Influence on Behavioural Intention to Online Registration System of Health Institutional Service in Surabaya 63
Eka Wilda Faida

Analysis of Smoking Behaviour Based on Sex among Junior High School Students 67
Diah Wijayanti Sutha

The Effectiveness of Fish Oil Containing Omega-3 Fatty Acids in Improving Quality of Life of Asthmatic Outpatients in Surabaya 72
Amelia Lorensia, Rivan Virlando Suryadinata and Aulia Nila Sari

The Ability of Schizophrenic Patients to Perform Productive Activities in Family and Community 79
I Gusti Ayu Rai Rahayuni, I Ketut Alit Adianta and Kadek Buja Harditya

Quality of Life of Caregivers of Stroke Patients 85
Nikmatul Fadilah, Minarti and Asnani

The Implementation of Posyandu for Preconception Women in Banggai District Starting at the Office of Religious Affairs (KUA) to Meet the SDGs's Target in Banggai Regency, Central Sulawesi 91
Lucy Widasari, Maisuri T. Chalid, Nurhaedar Jafar and Abdul Razak Thaha

The Effectiveness of Little Doctor Training to Improve Knowledge, Attitude and Skills at Early Age 97
Yunita Puspita Sari Pakpahan, Isa Ma'rufi and Ristya Widi Endah Yani

Analysis of The Policy Implementation in Inpatient Primary Health Center's Services in Jember 105
Moch. Riza Herwanto, Isa Ma'rufi and Farida Wahyu Ningtiyas

Analysis Of The Elderly's Individual Characteristics As An Effort To Improve The Quality of Life 113
Yudhiakuari Sincihu and Galuh Nawang Prawesti

Effectiveness of JSJ (Jin Shin Jyutsu) Massage and Acupressure at Points of LR 3 (Taichong) and LR 2 (Xingjiang) in Reducing Blood Pressure of Pregnant Mothers with Preeclampsia 122
Ika Mardiyanti and Yasi Anggasari

Theory of Planned Behaviour Application in Healthy Market Program in Bantul Regency Indonesia 126
Hariza Adnani, AA. Subiyanto, Diffah Hanim and Endang Sutisna Sulaeman

The Description of Quality of Life of the Elderly Using WHOQOL-BREF 133
Nurnaningsih Herya Ulfah and Endah Retnani Wismaningsih

The Effect of Heating Temperature on Flow rate and Moisture Content in Granules of Toxic Compound in the Mixture of Betel Leaves (Piper betle) and Srikaya Seeds (Annona squamosa) Extract 141
Dian Ratna Elmaghfuroh, Isa Ma'rufi and Dwi Wahyuni

Eliminating Time-Wasting Process at Outpatient Pharmacy for Better Patients' Experience in A Government Hospital in Indonesia 145
A. Y. Milasari, F. D. Rachmat and T. Lestari

Effort in Increasing Knowledge and Enviromental Health about Leptospirosis 153
Novendy, Rhegi Isdiara Fairuz, Ronald Salim, Tanty Notavia and Muhammad Faridzi Fikri

Maternal Nutritional Status and Low Birth Weight: A Prospective Cohort Study 158
Azrimaidaliza, Kusharisupeni, Abas Basuni and Diah M. Utari

The Correlation of Sanitary Conditions, Food Handler's Hygienic Practices, and Eschericia coli Contamination of Pecel Tumpang in Kediri City, Indonesia 163
Gading Giovani Putri and Yoanita Indra Kumala Dewi

Characteristics of Children With Type 2 Diabetes Mellitus: Hospital Based Study 169
Azrimaidaliza, Idral Purnakarya and Rozaliny Asri

Designing Enterprise Architecture of Patient-Centered Mobile Child and Maternity Health Services 174
Royana Afwani, Andy Hidayat Jatmika and Nadiyasari Agitha

Nutritional Management in Pulmonary Tuberculosis with Severe Protein Energy Malnutrition 181
Dewa Ayu Liona Dewi and Nurpudji A Taslim

Dedication Activity in Public Society for Detection and Diabetic Mellitus Treatment with Public Organization 187
Slamet Rihadi

Analysis on Policy of JKN Implementation in Jember Regency 193
Yennike Tri Herawati

Emotion Focused Coping: - Spirituality and Depression Symptoms in People Living with HIV 197
Ardiana Priharwanti and Nur Lu'lu Fitriyani

Implementation of Maternal Health Data Processing of Computerization for Preventing the Case of Maternal Mortality by Midwives at Puskesmas in Supporting SDG's Achievements 202
Maryani Setyowati and Vilda Ana Viera Setyawati

Prevalence and Correlation Between Overweight and Hypertension among Adults 209
Ahmad Hidayat, Mohamad Anis Fahmi and Ningsih Dewi Sumaningrum

Family Care Empowerment in Reducing Maternal and Infant Mortality Rate: A Success Story 213
Novianti Indah Fatmawati, Ratna Dwi Wulandari and Tito Yustiawan

Risk Characteristics of Non-Carcinogenic Benzene Exposure With IgA Workers in Shoes' Industrial Home, Surabaya 221
Abdul Rohim Tualeka, Nima Eka Nur Rahmania and Moch. Sahri

Index Predictive of Drug Resistant Tuberculosis (MDR-TB) on Tuberculosis Patients 227
Ariska Putri Hidayathillah, Chatarina Umbul W and Hari Basuki N

An Effort for Increasing The Coverage of Stimulation Detection and Growth Intervention Program in Primary Care 232
Awliyana Rislaputri and Rachmat Hargono

ARM (Anjungan Registrasi Mandiri) as Innovation of Front Line Service in a Hospital 239
Dhody Rofsanjani, Qurnia Andayani and Djazuli Chalidyanto

Adolescent Health Information-seeking Behaviour over the Internet 243
Diah Indriani, Mahmudah and Soenarnatalina Melaniani

Environmental Health and Leptospirosis Infection in the Society of the Endemic Area Kabupaten Sampang Madura 249
Dina Fitriana Rosyada and Ririh Yudhastuti

Health Problems Among Shoemakers Related to the Exposure to Glue Solvents Used 254
Erwin Dyah Nawawinetu, Abdul Rohim Tualeka and Dani Nasirul Haqi

Acceptance Analysis of an INFOBIDAN Application to Improve a Midwife's Competency in a Remote Area 260
Eska Distia Permatasari, Nyoman Anita Damayanti, Nuzulul Kusuma Putri and Ratna Dwi Wulandari

The Role of Parents, Teachers, and the Media in Increasing Awareness of Sexual Abuse Prevention for School Children in Banyuwangi 266
Ira Nurmala, Desak Made Sintha Kurnia Dewi and Jayanti Dian Eka Sari

Community-Based Health Effort for Elderly to Raise Awareness of Constipation Problem for Elderly in Madiun City 271
Linta Meyla Putri, Amelia Dyah Kartika Sari and Nuzulul Kusuma Putri

"Pak YM is very active once awaken the community…..": The Role of A Community Leader in Community Empowerment at A No-Drugs Village in Surabaya City 275
Devy Mulia Sari and Muji Sulistyowati

Phlebitis in Muhammad M. Dunda Hospital, District of Gorontalo, Observational Study 283
Nasrun Pakaya and PPI Muhammad M. Dunda Hospital Gorontalo

Breastfeeding among First Time Mothers 286
Nurhasmadiar Nandini, Djazuli Chalidyanto, Widodo J. Pudjirahardjo and Nuzulul Kusuma Putri

Monitoring and Evaluation of E-DHF Program Usage in Pasuruan City East Java Indonesia 290
Sri Widati, Rachmah Indawati and Lucia Y. Hendrati

Association Between Gathering Activity and Obesity in Adolescents in Surabaya, Indonesia 297
Suharmanto and Windhu Purnomo

Lifestyle, Workload and Work Stress Associated with Blood Pressure of Health Officer on The Class 1 Port Area of Tanjung Perak, Surabaya 303
Tri Martiana, Merryana Adriani, Diah Indriani, Mufatihatul Aziza Nisa and Andhika Nugraha

Dietary Pattern of Households with Maternal and Child Double Burden of Malnutrition in East Java, Indonesia 309
Trias Mahmudiono and Perla Reyes

Evaluation of Program Ship Examination For Disease Prevention in Port Health Office Class III, Manokwari 314
Yohana Yosevine Usmany, Trianta Wati, Yohanes Rapa' Patari and Rachmat Hargono

Tuberculosis Control Management: Implementation of DOTS (Directly Observed Treatment Short) Strategy in Achieving The Target of SDG's 2030 320
Luqman Nur Hakim, Globila Nurika and Roro Azizah

Success Story of "TERANGI BUMI": A Blood Donor Program for Maternity Death Prevention 324
Martha Wahani Patrianty, Ratna Dwi Wulandari and Tito Yustiawan

HNR (Home for Nutrition Recovery) As Innovation in Accelerating The Handling of Malnutrition 332
Richa Agustine Sundoko, Ratna Dwi Wulandari and Tito Yustiawan

The Relationship Between Post Natal Care, Education, Knowledge, and The Exclusive Breastfeeding on Housewives 338
Sinta Dewi Lestyoningrum, Mulya Widiyaning Tiyas, Ira Nurmala and Ratna Dwi Wulandari

Model of Potential Strengthening and Family Roles in Improving Family Members for ODGJ Adaptability 344
M. Suhron, Sitti Sulaihah and Ah. Yusuf

Measurement of Cost of Quality as Effort to Build Awareness of Importance of Quality and Strategy of Resilience in Health Care Facilities 352
Tri Astuti Sugiyatmi and Djazuli Chalidyanto

Quality of Diphtheria Surveillance System in the East Java Provincial Health Office 360
Riky Hamdani and Atik C. Hidajah

The Relationship Between Anxiety and Hypertension in the Elderly 368
Riza Fikriana

Health Problem Analysis of HIV/AIDS in the Health Office of Pasuruan District 372
Wardiansyah Naim, Chatarina Umbul Wahjuni and Supaat Setia Hadi

The Quality System of Early Warning, Alert, and Response System (EWARS) in The South Kalimantan Province, Indonesia 379
Dian Muspitaloka Hikmayati and Atik Choirul Hidajah

The Safe Duration of Benzene Exposure in the Motor Workshop Area 386
Erick Caravan K. Betekeneng, Abdul Rohim Tualeka, Mahmud Aditya Rifqi and Nurhayati Saridewi

Measuring The Quality of Renal Care Using Information System Design: An Early Warning System to Improve Health Care Quality 391
Umi Khoirun Nisak, Aditiawardana, Arief Wibowo and Hari Basuki Notobroto

Evaluation of Dengue Hemorrhagic Fever Surveillance System 396
Kusuma Cutwardani, Atik Choirul Hidajah and Sigunawan

Community Resilience as a Recovery Method for Psychiatric Patients: A Meta-Study 403
Retno Lestari and Ah Yusuf

Evaluation of an Epidemiologic Investigation and Risk Factors Study of Leptospirosis Disease 409
Sholikah, Atik Choirul Hidajah and Bambang Wuryono Kartika

Obstacles and Solutions for Tuberculosis Screening Among People With Diabetes Mellitus in Denpasar, Bali, Indonesia - A Need Assessment 414
IWG Artawan Eka Putra, PAS Astuti, IMK Duana, IK Suarjana, KH Mulyawan, NMD Kurniasari, IBG Ekaputra, A Probandari and CU Wahjuni

Nutritional Status, Body Fat Percentage, Hemoglobin Level and Physical Fitness in A Football Athlete 419
Ratna Candra Dewi, Nanda Rimawati and Lutfhi Abdil Khuddus

Compassion in Interprofessional Health Education is a Lagged Trigger to Quality Health and Well-being 425
Simon Martin Manyanza Nzilibili and Qurnia Andayani

Exploring the Role of NGOs' Health Programs in Promoting Sustainable Development in Pakistan 430
Septi Ariadi, Muhammad Saud and Asia Ashfaq

Correlation Knowledge, Attitude and Actions with Health Complaints from Exposure of Pesticides on Horticultural Farmers 436
Andree Aulia Rahmat, Eska Distia Permatasari and Retno Adriyani

Description of Anthrax Outbreak Investigation in Pacitan District in 2017 442
Veronika Ofong, Chatarina U. W and Supaat

Epidemiology of Measles in the Gresik District of Eastern Java Province from 2014 to 2016 447
Asrul Kaimudin, Atik Choirul Hidajah and Bambang Wuryono Kartika

Analysis of Factors That Affect Family Centered Empowerment while Caring for Children with Leukemia 453
Yuni Sufyanti Arief, Nursalam, IDG Ugrasena and Shrimarti R. Devi

Zinc Status and Cadmium Exposure in Stunted Children Aged from 24 to 59 Months: A Cross Sectional Study 457
Sulistiyani, Leersia Yusi R., Ninna Rohmawati, Ruli Bahyu Antika, Bambang Wirjatmadi and Merryana Adriani

The Reduced Pain in Patients With Knee Osteoarthritisis Related to the Quality of Life Improvement of The Physical Domain 462
Carolus Aldo Windura, Yudhiakuari Sincihu, Nunung Nugroho and Rachmad Suhanda

Limited Resources and Complicated Procedures - Maternal Health Problems of Urbant Migrants in Region 468
Nuzulul Kusuma Putri, Ratna Dwi Wulandari and Nyoman Anita Damayanti

The Consequences - Financing Prompt Treatment Until Terminal of HIV AIDS in Universal Health Coverage 473
Ernawaty, Nuzulul Kusuma Putri and Lilis Masyfufah

Interprofessional Collaboration as The Most Essential Solution in Decreasing Maternal and Child Death 477
Nyoman Anita Damayanti, Ratna Dwi Wulandari, Nuzulul Kusuma Putri, Darmawan Setijanto, Muhammad Ardian Cahya Laksana and Charity Hartika Listiyani

Urban Settlements in The Context of Healthy City 483
Oedojo Soedirham

The Correlation Between Pregnant Mother Class Participation and Completeness Status of Plenary Health Service Visit (K4) at Working Area of Puskesmas Sukabumi in Probolinggo Municipality 488
Luluk Muyassaroh, Sri Hernawati and Farida Wahyu Ningtiyas

Effect of Diabetes Gymnastics and Nutrition Counseling on Lowered Blood Glucose Levels in Patients With Diabetes Mellitus Type II in Jatilawang Puskesmas in Banyumas Regency 495
Susi Tursilowati, Lulu Nisa Nur' Aprillia and Astidio Noviardhi

Post Natal Care (PNC) Service With The Level of Postpartum Mother's Satisfaction in The Working Area of Sukomulyo Puskesmas in Gresik 502
Hani Habibah and Yunita Dyah Fitriani

Role of Hypertension to Chronic Kidney Disease Incidents 507
Fauziah Elytha, Roma Yuliana and Abdiana

Self-Disclosure of Adolescents about Unwanted Pregnancy to Their Partners and Parents: A Qualitative Study in Cetral Java Indonesia 512
Aprianti, Zahroh Shaluhiyah and Antono Suryoputro

Management and Development of Human Resources to Improve The Quality of X Hospital Services in Universal Health Coverage Era 518
Christyana Sandra

The Relationship between Various Coronary Heart Diseases (CHD) Factors and the Health Literacy of Patients 523
Fauziah Elytha, Ratno Widoyo and Yulia Fanesis

Analysis of The Implementation of Local Public Service Agency Policy on The Quality and Performance of Hospital Services 529
Shelvy Haria Roza and Inge Angelia

The Relationship Between Parents' Knowledge about Children's Need of Playing and The Growth of Children Aged 3-4 Years at Kawisto Village in Duduk Sampeyan District Gresik Regency 535
Yuyun Farihatin and Setya Purbasari

The Safety Test of Granular Bioinsecticide Mixture of Betel Leaves (Piper betel) and Srikaya Seeds (Annona squamosa) Extract to Non Targetted Organism 540
Dia Qori Yaswinda, Dwi Wahyuni and Erma Sulistyaningsih

Dimension of Nurses Responsiveness in Improving Health Quality Service Based On SERVQUAL Concept 546
Mohammad Henri Wahyono, Ancah Caesarina and Sebastiana Viphindrartin

Child Marriage's Representation of Maternal Output to Premature Delivery Incidence in RSUD dr. Doris Sylvanus Hospital Palangka Raya, Indonesia 551
Sigit Nurfianto, Qurnia Andayani and Nyoman Anita Damayanti

Risk Index of Infarct Stroke based on Modifiable Risk Factors 557
Santi Martini, Kuntoro, M. Hasan Machfoed and Joewono Soeroso

Bio-Psycho-Socio-Cultural Approach Training Towards Drug Abuse and HIV-AIDS Prevention Among Teenagers 563
Margaretha, Santi Martini and Yulis Setiya Dewi

Care Culture of Pregnant Mothers 570
Agustina Abuk Seran, Stefanus Supriyanto and Alberth M. Bau Mali

Best Practice of Patient-Centered Care Implementation at Universitas Airlangga Hospital Indonesia 578
Purwaningsih, Nasronudin, Nyoman Anita Damayanti and Imam Subadi

Patient Safety Incident Reporting Analysis Based on Integrity and Commitment Team in Inpatient 583
Heru Suswhojo and Nyoman Anita Damayanti

Four Forms of Social Support for 3-6 Years Old Child's Caregivers 589
Qurnia Andayani

Occupational Exposure to Green Tobacco Sickness among Tobacco Farmers in Jember, East Java, Indonesia 596
Anita Dewi Prahastuti Sujoso and Tri Martiana

Early Marriage and Cultural Stigma of Madurese Young Woman Based on Review of Socio-Ecological Factors 603
Tri Anjaswarni, Nursalam, Ah Yusuf, Sri Widati and Tutik Herawati

Belief, Self-Efficacy and Other Predictors of Adherence to ART Among Women Living with HIV
Widia Shofa Ilmiah, Mochammad Bagus Qomaruddin, Selvi Ulva Aisah Nurhadi Putri and Nova Iswardani 610

Five Pillars of "Pro-Sehat DT" For Strengthening The Community Empowerment 617
Qurnia Andayani and Sudarmadji

Analysis of The Influence of Service Quality to Outpatient's Satisfaction at Pharmacy Installation of Kaliwates Hospital 622
Hindun Mardiyana, Isa Ma'rufi and Zarah Puspitaningtyas

Family's Support, Coping Mechanism, Disability and Depression Among Elderly in Rural Area 627
I Wayan Suardana, Ah Yusuf and NLK Sulisnadewi

Enforcing the Services of Prolanis Based on Strategic Management Approach in Wonopringgo, Pekalongan Regency 634
Yuniarti, Etika and Dewi Nugraheni R. M.

D. Sertifikat dan Schedule

CERTIFICATE

This is to Certify that
Dr. Sri Widati, S.Sos., M.Si.

has participated as :
Participant
at
The 2nd International Symposium of Public Health
"ACHIEVING SDGs IN SOUTH EAST ASIA : CHALLENGING AND TACKLING OF TROPICAL HEALTH PROBLEMS"
Surabaya, 11th-12th November 2017

2 Days Schedule At A Glance

Time	Saturday, 11 November 2017	
06.30-08.00	Registrations	
08.00-09.10	Opening Ceremony	Poster Presentation 1 (Appraisement 13.30-14.30) Field trip (14:30-end)
09.10-10.10	Keynote Speech (Health Minister of The Republic of Indonesia)	
10.10-12.30	Plenary Lecture 1	
12.30-13.30	Lunch	
13.30-14.30	Oral Presentation I	
14.30-15.30	Oral Presentation II	
15.30-16.30	Oral Presentation III	
Time	**Sunday, 12 November 2017**	
06.30-08.00	Registrations	
08.00-09.00	Plenary Lecture 2 (Mayor of Surabaya)	Poster Presentation 2 (Appraisement 13.30-14.30)
09.00-10.35	Plenary Lecture 3	
10.35-11.05	Morning Refreshments	
11.05-12.05	Oral Presentation IV	
12.05-13.05	Lunch	
13.05-14.05	Oral Presentation V	
14.05-14.35	Evening Refreshments	
14.35-15.35	Publishing Proceedings Process	
15.35-16.25	Symposium Closure and Awarding Ceremony	

Conference Schedule

Saturday, 11 November 2017	Lacewing Ball Room			Blue Marlo	Mariposa Restaurant	Area in front of The Lacewing Ballroom
Time	**Lacewing 1**	**Lacewing 2**	**Lacewing 3**			
06.30-08.00				Registrations		Poster Presentation 1 (Appraisement 13.30-14.30)
08.00-09.10	Opening Ceremony					
09.10-10.10	Keynote Speech (Health Minister of The Republic of Indonesia)					
10.10-12.30	Plenary Lecture 1					
12.30-13.30					Lunch	
13.30-14.30	Oral Presentation I					
	Health Administration and Policy 2	Field trip briefing	Health Promotion and Behavioral Sciences 2	Nutrition 1		
14.30-15.30	Oral Presentation II					
	Health Administration and Policy 3	Nutrition 2	Health Promotion and Behavioral Sciences 3	Health Promotion and Behavioral Sciences 1		
15.30-16.30	Oral Presentation III					
	Health Administration and Policy 4	Occupational Health and Nutrition	Health Promotion and Behavioral Sciences 4	Health Administration and Policy 1		

Sunday, 12 November 2017	Lacewing Ball Room			Blue Marlo	Mariposa Restaurant	Area in front of The Lacewing Ballroom
Time	Lacewing 1	Lacewing 2	Lacewing 3			
06.30-08.00				Registrations		Poster Presentation 2 (Appraisement 13.30-14.30)
08.00-09.00	Plenary Lecture 2 (Mayor of Surabaya)					
09.00-10.35	Plenary Lecture 3					
10.35-11.05					Morning Refreshments	
11.05-12.05	Oral Presentation IV					
	Health Administration and Policy 5	Environmental Health 2	Health Promotion and Behavioral Sciences 5	Epidemiology 1		
12.05-13.05					Lunch	
13.05-14.05	Oral Presentation V					
	Health Administration and Policy 6	Epidemiology 2	Health Promotion and Behavioral Sciences 6	Environmental Health 1		
14.05-14.35					Evening Refreshments	
14.35-15.35	Publishing Proceedings process					
	Symposium Closure and Awarding Ceremony					

UNIVERSITAS AIRLANGGA
FACULTY OF PUBLIC HEALTH
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Secretariat: Faculty of Public Health, Universitas Airlangga, Campus C Mulyorejo
Surabaya– 60115,Telp/Fax. (+62-031) 5990603

Group: Epidemiology 1
Sunday, November 12th, 2017
Room Blue Morfo

Time	No.	Title	Presenter
11.05 – 12.05	1	Hypertension Role With Disease Chronic Kidney Incidents In Dr. M. Djamil Padang Hospital 2016	**Fauziah Elytha,** Rome Yuliana, Abdiana
	2	Breeding Place Quality As Determinant Of Malaria Vector Species On Endemic Area Case In Purworejo Distric Central Java	**Mursid R.**, Yusniar H. D., Praba G .
	3	The Stuctural Model Of Environment And Sosio-Economic Factors Of The Underfive Children's Diarrhea In The Manado City	**Oksfriani Jufri Sumampouw**, Adisti Aldegonda Rumayar, Jeini Ester Nelwan, Ronald Imanuel Ottay
	4	Risk Index of Infarct Stroke based on Modifiable Risk Factors	**Santi Martini,** Kuntoro, M. Hasan Machfoed, Joewono Soeroso
	5	Monitoring and Evaluation of E-DHF Program Usage in Pasuruan City East Java Indonesia	**Sri Widati,** Rachmah Indawati, Lucia Y. Hendrati
	6	Analysis Of Grouping And Distribution Mapping Based On Factors Affecting DHF Diseases In Padang City In 2016	**Vivi Triana**

Monitoring and Evaluation of E-DHF Program Usage in Pasuruan City East Java Indonesia

Sri Widati[1], Rachmah Indawati[2] and Lucia Y. Hendrati[3]
[1]*Department of Health Promotion and Behavior Science, Faculty of Public Health UniversitasAirlangga, Mulyorejo, Surabaya, Indonesia*
[2]*Department of Biostatistics and Demography, Faculty of Public Health UniversitasAirlangga, Mulyorejo, Surabaya, Indonesia*
[1]*Department of Epidemiology, Faculty of Public Health UniversitasAirlangga, Mulyorejo, Surabaya, Indonesia*
widatisantoso@gmail.com, rachmah97@yahoo.com, hendratilucia@yahoo.com

Keywords: e-DHF, outbreaks, Dengue, Pasuruan

Abstract: Outbreaks of Dengue occur because of late in detecting cases. This research aims to create an online program that can speed up reporting of Dengue cases. It can be detected as early as possible. This research is an action research. Respondents are attendant health centers, clinics, hospitals and the Health Service as much as 14 people. Sampling was done by using purposive sampling technique. Evaluation method using questionnaire. In the first meeting, all of respondent discussed about E-Dengue Program in Focus Group Discussion. In second meeting, they were trained and tried to use the E-Dengue program. In the third meeting, they reported and evaluated the E-Dengue Program. The study was conducted during 11 months. The results of evaluation showed that e-DHF effective in identifying and analyzing and predicting Dengue outbreaks both in terms of input, process and output. To All of respondents said that E-Dengue program is easy to use and help them to report quickly.Provider hospital/ clinic, health center, and the Local Health District will do an active role in e-Dengue program. E-DHF can identify the accuracy of data collected and accelerate the analysis, presentation and reporting of Dengue cases. E-DHF is effective to detect outbreaks of dengue.

1 INTRODUCTION

For tropical countries, such as Indonesia, cases of Dengue fever (DHF) still becomes health problem that causes death. Deaths due to Dengue fever can be caused by several factors such as host, environment and agent. The variables of host factor are the nutritional status, knowledge, health services, and reporting Dengue cases from hospitals and clinics. The variables of environmental factors are the cleanliness, the free water reservoirs of mosquito larvae as well as free of clothes hanging. Environmental factors is to facilitate the agent multiply. For the sake of survival, the virus must compete with human cells as a host, especially in meet the need for protein. Competition is highly dependent on the durability of the host, if the durability is low then the course of the disease became more severe and can even cause death (Soegijanto, 2003).

Pasuruan in the category of outbreaks of Dengue Fever. Until April 2016 there are 11 patients who died because of Dengue. September 2016 there are 7 patients with Dengue and one of them died (Hartik, 2016).Even in the period August to November 2016 there will be 11 people died due to Dengue.

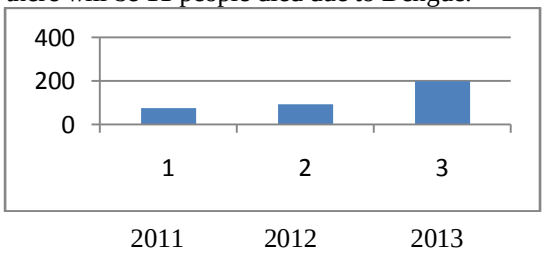

Figure 1: The distribution of dengue cases of Pasuruan.

Over a period of 3 years, the incidence of Dengue hemorrhagic fever (DHF) in the City of Pasuruan tends to increase as shown by figure 1. In 2010, as many as 85,3% village (29 out of 34 villages) in the City of Pasuruan into a village of

endemic Dengue. This figure is an increase of 8.8% compared to the previous year. However, in 2012 and 2013 decreased to 58.8% (DinasKesehatan Kota Pasuruan, 2014).There are 6 health centers in the City of Pasuruan, which still has a village endemic Dengue, the health centerKarangketug, Singkil, Sekargadung, Kebonagung, BugulKidul and Kebonsari. As much as 75% of the territory of each puskesmas is considered endemic Dengue. Only the health centerTrajeng and health Kandangsapi that does not have a village endemic Dengue. This condition is possible because of the still high density of mosquitoes in the City of Pasuruan. In 2013, Numbers Free Flick (ABJ) in all the village, Pasuruan still under the target (80%).

Risk factors is one of the main information in terms of surveillance, the information about the person, place and time (Departemen Kesehatan RI, 2008).One of the risk factors in the incidence of Dengue is a delay early detection. Early detection is also a major problem in the City of Pasuruan. The presence of a delay in early detection of Dengue dragging the city towards the case of extraordinary Events (outbreaks). One of the causes is the slow reporting from upstream to downstream. This occurs because the information system is still done manually. Reporting the incidence submitted in writing every month so there is a time lag between occurrence and reporting.

The information system is still done manually due to limited resources, unavailability of variable risk factors, as well as weak coordination across related sectors. The Information system can not provide the facilities the speed of reporting, the behavior of the treatment, the frequency of draining the water bath and the presence of trash that can hold water that cause the incidence of Dengue.

In this world there are a wide variety of information systems, ranging from the simplest to the most sophisticated. Today, documentation of the results of the analysis of the system can be in the form of a flowchart, chart and data flow diagram (data flow diagram). A data flow Diagram or data flow diagram (DFD) is a graphical representation of a system that uses a number of forms and symbols to depict the flow of data through a process of relating (McLeod, 2001)the Purpose of this study is to evaluate the effectiveness of the implementation of the e-DHF program in the City of Pasuruan.

2 METHOD

This study is the third stage of the circuit stages of the research within 3 years. This research is action research that is research that focuses on improving the quality of the organization in this case the Department of Health Pasuruan City as well as the performance of the surveillance system of Dengue fever. The system is developed with the involvement of other agencies as the efforts of the vigilance of early incidence of outbreaks of Dengue fever with partner hospitals/clinics and health centers. The research that has been done in the first year resulted in the identification of communities and institutions in the City of Pasuruan as the material to make the information system e-DHF. Research in the second year produces Software e-DHF, i.e. online information system that involves the provider and the department of health, and Software have been analyzed and operationalized. The flow of reporting is depicted in figure 2.

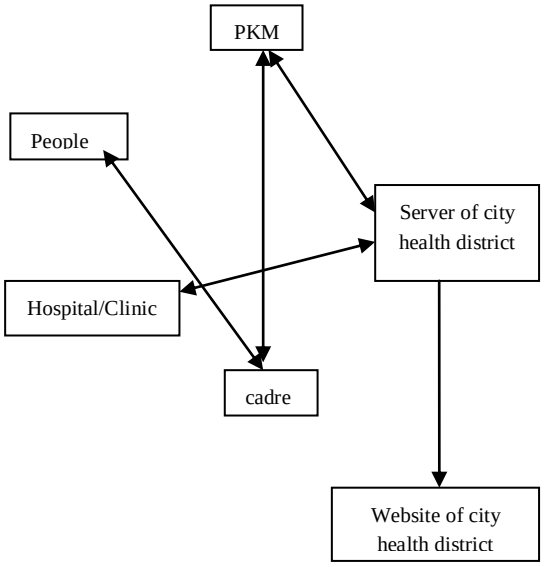

Figure 2: Path of reporting.

The activities of the third year is the monitoring and evaluation of the implementation of the software e-DHF and the rate of such a system includes input, process, and output. Study the third year is intended to evaluate the implementation of program e-DHF. Evaluation of the implementation using a questionnaire. Respondents are officers of health centers, clinics, hospitals and Health Department as many as 14 people. Sampling was done using purposive sampling technique. The study was conducted during 11 months from January 2016.

There are 3 stages in this phase. First, the respondents tried e-DBD and implementing it, both of them evaluate the implementation of e-DHF, second revised e-DHF based on the feedback from the respondents of the study. Once evaluated and revised then the information system of e-DBD is implemented. Evaluation and monitoring is done during implementation and the results of the evaluation presented in the research results. In third stage there were 3 meeting. In the first meeting, all of respondent discussed about E-Dengue Program in Focus Group Discussion. In second meeting, they were trained and tried to use the E-Dengue program. In the third meeting, they reported and evaluated the E-Dengue Program.

3 RESULT

This research was conducted in 3 stages. Stage 1 was conducted in the year 2014. Stage 1 is done by distributing questionnaires to a sample of 130 families obtained from the software CSurvey. The respondent is the family head (father or mother). Data is also collected by conducting FGD. The population of the FGD are all community leaders, religious leaders, and health workers, which is in the region of Pasuruan city. The sample for the FGD participants taken 1 people community leaders, 1 religious figures, and 1 health workers in the region work puskesmas and representing in each village. Participants of the FGD came from the Village Karangketuk, Petahunan, Randusari, Krapyakrejo, Kebonagung, Purutrejo, Purworejo, BugulKidul, Kepel, Tapaan, Going, Krampyangan, Blandongan, Trajeng, Tambaan, contemporary styles, and Ngemplakrejo.

The conclusion of the research stage 1 indicates that the knowledge society in the City of Pasuruan on the prevention and control of Dengue has been good but community action is still lacking. The results of the research stage one also showed that the Department of Health Pasuruan City has developed a surveillance system by collecting data on the Office Plague and Disasters the Department of Health of the City of Pasuruan. But all pelaporan and the data is not yet be computerized so that the information produced is still yet to be delivered quickly and on time.

During this time, the data collected the Department of Health is the data the number of cases and place of the incident. Flow reporting starts from the patient Dengue, which is detected by the local medical center, hospitals/clinic are then reported to the Office Plague and Disasters the department of health. The Data will be followed up with the command to do fogging in the area of the case. Because the reporting is still done manually, then often this reporting takes a lot of time as a result slow action is performed. The results of this study also identify the presence of problems of input of information system, namely the problem of the lack of the ability of officers in data processing and interpretation of data as well as makingchartpatterns minimum maximum as a tool in monitoring the early detection of outbreaks of dengue fever. At the stage of the process of reporting, accuracy, and completeness of the data collection can be considered still low. Acceptability for information is also still low.

Table 1: The frequency of distribution of the respondents E-DHF fever in the city of Pasuruan.

Institution	F	**%**
Health Distric	2	14,3
Hospital	1	7,1
Puskesmas	8	57,1
Clinic	3	21,4
Respondent opinion's about CPR Output	F	%
Need to increase	4	28,6
No need to increase	10	71,4
E-DHF Information about early detection of DHF	F	%
Not Good	1	7,1
Good	13	92,9
Easy to evaluate probabilty to be DHF outbreaks	F	%
No	2	14,3
Yes	12	85,7
Easy to evaluate of E-DHF Coverage	F	%
No	1	7,1
Yes	13	92,9
Easy to evaluate relationship	F	%
No	2	14,3
Yes	12	85,7
Respondent's opinion about the simplicity of E-DHF	F	%
No	1	7,1
Yes	13	92,9
Easy to fill the form of E-DBD	F	%
No	1	7,1
Yes	13	92,9
Easy to send data in E-DHF	F	%
No	1	7,1
Yes	13	92,9
E-DHF could give Surveillance Indicator	F	%
No	2	14,3
Yes	12	85,7

Easy to Read Case Fertility Rate	F	%
No	3	21,4
Yes	11	78,6
Easy to Read Incidents Risk	F	%
No	3	21,4
Yes	11	78,6
Easy to Read Graphic	F	%
No	3	21,4
Yes	11	78,6
Easy for Data Analysis	F	%
No	1	7,1
Yes	13	92,9

System the right information, quickly, accurately expected to detect early incidence of

Dengue so that it can be done immediately to prevention of the spread of the cases. With earlydetection the incidence of Dengue can be suppressed and minimized its occurrence so that the mortality rate can also be decreased.

Research phase 2 was conducted in the year 2015. Research the second phase of this has resulted in software e-DBD, which can be operationalized by the health care system and public health authority. E-this DBD system is online with the approach of cloude compute. Such a system can function in collecting and storing data and presents the chart of the forecast minimum and maximum. Thus the stability of the stored data can be maintained. In addition, with the e-DBD, easy to report and more simple. Data processing can be done easily because the system has been complemented by the presentation of chart patterns minimum and maximum. The Output that is produced automatically generate indicators that can be used to establish the extraordinary events based on the criteria of outbreaks.

In stage 3, the study was conducted with the objective to monitor and evaluate whether the software e-DHF can be applied as information systems early warning is a remarkable occurrence of Dengue in the city of Pasuruan. With the special purpose to analyze the results of the application of e-DHF with a systems approach (input, process, output), identify the role as well as provider (hospital/clinic, health center, health), as well as identify the timeliness of the data collected (timelines).

Respondents in the study stage 3 from the district Health Office, health centers and Clinics in Pasuruan. They are the users of the service e-DHF. As shown table 1, the number of respondents most little derived from the hospital because there is only 1 hospital in the City of Pasuruan. Most respondents came from the health center because there are 17 health centers in the City of Pasuruan with the 6 health centers that endemic Dengue.

Most of the respondents consider there is no difficulty either in terms of time and technical program in terms of charging data of e-DHF. They can do because it is part of their duty to report the incidence of Dengue to the Health Department. However there are 2 respondents who are having difficulty in doing the data entry of e-DHF. This happens because the two respondents did not follow the training that was held. Because there are respondents who do not follow the initial training then these respondents felt that there was a slight difficulty in operating the e-DHF. As much as 100 percent of the respondents argued that the coverage area of the e-DHF less extensive because only in CityPasuruan. All respondents expect that e-DHF can be expanded enforced in the whole of East Java, even in Indonesia.

Table 1 shows that the respondents are of the opinion that e-DHF need to be added a variable so that it increase the limit of the Output of the CPR. The variable in question is of variable area and distance range. However, Table 1 also shows that the respondents think the information shown e-DHF can be a means to detect outbreaks of dengue fever early.

All respondents argue that by using e-DHF then the process of data collection becomes faster in addition to easier data collection. All respondents also argue that with the e-DHF then the presentation of the data to be precise and easy. In addition to more quickly, easily, and accurately, the respondents also argue that the e-DHF facilitate in performing the comparison, as shown in Table 1.

E-DHF also facilitate the respondents in view of the tendency of the occurrence of dengue fever and gives ease in seeing the coverage the incidence of dengue. According to the respondents e-DHF can also help the respondents in view of the relationship between the variable occurrence of DHF, as shown in Table 1.

Most of the respondents are of the opinion that the e-DHF simple and easy in filling the form. Respondents no difficulty in filling the form e-DHF and there is no question at all. In terms of data delivery e-DHF, the respondents also argue that the process is easy and not difficult. From Table 1 can also be aware that most of the respondents perceive e-DHF can produce indicators of the surveillance so through e-DBD can be detected the possibility of an outbreak of dengue. E-DHF also facilitate in assessing the Case Fertility Rate and Incident Rate.

E-DHF also provides a means of drawing a graph that shows the incidence in all regions in Pasuruan. From these Graphs, the reader can see and estimate where it will be going outbreaks of dengue fever. According to the respondents e-DHF this ease in reading the chart the incidence of Dengue fever so it is easy in predict the occurrence of outbreaks.

All respondents argue that the data is stored e-DHF is stable enough and e-DHF greatly help in the data analysis as shown in Table 1. Almost all respondents argued that the e-DHF is able to help them in analyzing the data related to Dengue fever and outbreaks of dengue fever. In general, e-DHF greatly assist officers in detecting an impending outbreak.

Although overall e-DHF greatly help health workers, but there are 3 respondents who have difficulty in terms of the availability of a computer in his office. The computer is needed for the purposes of data entry and to read the results. The effort that has been done is advocate for the institution to provide computer facilities for e-DHF. Other issues that appear in addition to availability of computers is the internet connection is substandard. For institutions that its internet connection is less smoothly, through this research has provided the modem for them.

All respondents argued that the e-DHF should be continued and developed. They are very supportive to e-DHF applied in all regions in Indonesia. All the respondents also argue that the e-DHF that has been made is the right method to help early detection of cases of outbreak of dengue.

4 DISCUSSION

The natural environment of the tropics, sanitation is poor and the number of population as well as low awareness of the community to be the main reason dengue is rampant. Indonesia even occupy the highest position in the case of Dengue disease in Southeast Asia with 10,000 cases in the year 2011 (Zakia, 2012).Speed in reporting will affect the speed in an effort to prevent the spread of dengue. Information system-based electronic will speed up the process of reporting information and analysis of the case. As expressed by Hill and Irwin (2005)that the information system is an orderly combination between people, hardware (machine and media), software (programs and procedures), data (basic data and knowledge), networks (communications media and network support) and data resources that collects, transforms, and disseminates information in an organization.

The needs of information dissemination of dengue fever is required by various parties such as the Department of Health, health centers, Kliik and hospitals. The respondents in this study have met the prerequisites. Both in identification and implementation and evaluation has involved various parties from the Department of Health, health centers, Clinics and hospitals in Pasuruan. They are the users of the service e-DHF. Before e-DHF is created, they are identified and then analyzed. The results of the analysis became the basis for the creation of e-DHF.

Coordination between related sectors is very difficult to do when using the manual way which is traditional. The use of information technology or the computer can be applied to facilitate the coordination and communication data for the relevant institutions. The use of computers also facilitate the analysis of the data. Surplus computers is the speed and effectiveness of processing data and are able to produce various kinds of output expected. Computer technology also can be used

Program e-DHF recently completed on year 2015. Hence, since the 2013-2015 none provider better Hospital/clinic, health center or Health Department that plays a role as well. From 2013-2015 the data is still blank and not filled back by the provider. The number of tasks and workload other be the reason for the provider not enter the data of the last 3 years.

New at the beginning of the year 2016, there are 2 clinics to participate actively in the program e-DHF, i.e. the Clinic Al Aziz and Company. While other providers, such as health centers and Health Department, only utilize such data for the purposes of the database. Nevertheless the provider has active access e-DHF and use for several purposes such as reporting of DENGUE cases.

There is some informationthat is loaded by e-DHF include: patient name, address, date of identifiable Dengue fever, lab results Dengue fever and the diagnosis. Information is data that has been processed into a form that is more useful and more meaningful for the recipient, whereas data is a source of information that describes an event. According to Siregar (2006) information system is the order of the change data into information that can be used for decision making so it can be done variety action health development.

Most of the respondents consider there is no difficulty either in terms of time and in terms of technical data charging e-DHF. On the contrary,

almost all respondents consider e-DHF is easy and it help them in performing the task of reporting. For this is indeed the respondent was the one who always make a report of the incidence of DHF per month. They make reports manually and then sent manually to the office of the Department of Health. System amnual this according to them is difficult because it requires a lot of time that travel and transportation from the location of heading to the office of the Department of Health. Information system e-DHF this is a system that meets the needs identification, processing and analysis of data that is managerial and could be the strategy of the Department of Health. System e-DHF is in compliance with the character of such a system which is said to Jogiyanto (2005) that the character of the system include system components, system boundary, the environment outside the system, liaison system, input system, output system and the target system. It is also in line with Siregar (1992) that a systems approach is the perspective of the object that is learnt as a system. A systems approach is used to study the function of the following system elements of the system in it. A systems approach is also useful to view the issues concerning cross-sectoral. This information system required by all parties and become an important part of the prevention of infectious diseases (Witten, 2004)

According to the respondents, processing the data through e-DHF is easily done. System e-DHF has been compiled based on needs in the field. Already customized to your needs so that data processing does not need to be done manually. Just click a button required in accordance the purposes of the data processed automatically. Mapping areas of threatened endemic dengue was immediately can be seen and read in the chart. In addition to processing data which is easy to do, e-DHF also facilitate in presenting the data according to person, place and time. Stay clicked the people or the place or the time then the presentation of the data have been arranged according to which is cooled. No longer need to the presentation manually. Thus e-DHF has meet the system requirements as revealed by Siregar (1992) that the information system of the Science of health record data of a state of health in a place and at a specific time. System e-DHF have also been able to give feedback to planning and control. This is consistent with Witten (2004) that all system and subsystem is interdependent and related to each other. In the feedback system is a form of control system used for planning and control to manage resources.

According to Jogianto (2005), system analysis is the decomposition of the system into system components to identify and evaluate problems and needs, so that improvements can be proposed. From the results of the analysis of the system can be evaluated that although e-DBD is easy or not complicated but still needed training for officers before using it. This is shown by the existence of 2 respondents who experience difficulty in doing the data entry of e-DHF. Their difficulty because two respondents did not follow the training that was held earlier.

In this study, respondents argue that the coverage area of the e-DHF less extensive because only in CityPasuruan. Respondents recommend that the e-DHF can be expanded enforced in the whole of East Java. With regard to the coverage of the region actually e-DHF can be developed by using the method of PostGIS. PostGIS is a system to store geographic data in the relational database postgreSQL. PostGIS is developed by flattrchattr apps Research. PsotGIS create a spatial object, in the form of points, lines and polygons. This can be stored in the database and then can be used to detect the occurrence and the possibility of its spread (Mitchell, 2005).

In the e-DHF need to be added variable area and distance range. The distance range can be developed by using GIS systems (Geographic Information System). This system can capture, store, analyse, query and display geographical data (Kang, 2002).Thus The accuracy of the region that is attacked can be identified with the right. This can be developed for further research.

Early detection through e-DHF allows to do because through e-DHF then the data collection process becomes faster and reporting is also faster. The analysis process also greatly assisted by the automated systems that add up the case and detect the incidence of cases per region. In addition it method the graphs presented to make the analysis easier and faster.

Various trends that will occur can also be analysed through the E-DHF. E-DHF has been designed to see the trend. The relationship between variables can be seen in this system. The addition of GIS and the GIS will facilitate the officers to analyze and decide the next action to be done. In addition, the simplicity and ease of an information system became an important part smooth running of the system. Program e-DHF is relatively simple and easy in filling the form. There is no difficulty that respondents perceived except in the case of procurement of computers and wifi network.

Procurement of computers and wifi network is a burden that must be borne by each institution. Budgeting should begin to be held next year. Efforts to advocate for the institution has been done. For institutions that its internet connection is less smoothly, they have assisted with the provision of the modem through research.

In terms of speed of data collection, e-DHF is very rapid. e-DHF is an online media that connect one institution with other institutions. The same as the characteristics of the other online media, reasonable if the e-DHF plays a role fast in terms of speed of data collection. Institutions do not need to meet offline to reporting. Does not require a lot of time and a certain place so the data is immediately reported well and to quickly and accurately.

Program e-DHF can also produce indicators of surveillance. This is because the e-DHF also allow and facilitate in assessing the Case Fertility Rate and Incident Rate. The case of the death and the incident can be accumulated, analyzed and used as a prediction of the incidence of the next. In addition, e - DHF is stable enough. The stability of a program is needed so that the collected data is complete and analysis can be done with the right.

Dignan (1992) says there are three basic concepts of evaluation. The first, evaluation is the investigation or analysis of a program that has been run. Second, the evaluation in principle focus on the identification of program performance. Third, Evaluation is done based on the standard of comparison, depending on the initial design adjust the objectives of the program. The results of the evaluation based on the theory of Dignan shows all the results of this study show that e-dengue should be continued and developed. Program e-DHF also possible to be applied in all regions in East Java, even Indonesia. From all these results it could be concluded that e-DHF is very useful for the community and health workers. E-DHF is seen to be able to help early detection of cases of outbreak of dengue fever in the City of Pasuruan.

5 CONCLUSIONS

E-DHF is effective in recognizing and analyzing as well as predict the occurrence of outbreaks of dengue fever both in terms of input, process and output. Provider Hospital/clinic, health center, and the Department of Health all want to play an active role in the program e-DHF. E-DHF can identify the accuracy of the data collected and quick in analysis, presentation and reporting of dengue cases. Recommendations from this study is that the Department of Health Pasuruan City apply e-DHF as an effort to early detection of cases of outbreak of dengue fever. Thus the expected case of outbreaks of dengue fever decreased and the City of Pasuruan is eliminated from endemic Dengue.

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