

**THE SUSTAINABILITY OF COMMUNICATION  
FOR BEHAVIOURAL IMPACT (COMBI)  
PROGRAMME IN THE PREVENTION AND  
CONTROL OF DENGUE IN KELANTAN**

**By**

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## LIST OF SYMBOLS AND ABBREVIATIONS

%	Per cent
=	Equal to
<	Less than
>	More than
≥	More than and equal to
$\chi^2$ statistic	Chi-square statistic
95% CI	95% Confidence interval
AI	<i>Aedes</i> index
AIDS	Acquired immunodeficiency syndrome
AIM	Amanah Ikhtiar Malaysia
<i>Ae.</i>	<i>Aedes</i>
AEHO	Assistant Health Environmental Health Officer
BI	Breteau index
CBDCP	Community-based dengue control programme
CCC	Community COMBI committee
CFR	Case fatality rate
CI	Container index
COMBI	Communication for Behavioural Impact
DCD	Disease Control Division
DENV	Dengue virus
df	Degree of freedom
DF	Dengue fever
DHF	Dengue haemorrhagic fever
DHO	District Health Office



## **LIST OF SYMBOLS AND ABBREVIATIONS**

<b>DHOB</b>	District Health Office of Bachok
<b>DHOTM</b>	District Health Office of Tanah Merah
<b>DMOH</b>	District Medical Officer of Health
<b>DSS</b>	Dengue shock syndrome
<b>GDW</b>	Gerakan Daya Wawasan
<b>HIV</b>	Human immunodeficiency virus
<b>ICT</b>	Information and communications technology
<b>IgM</b>	Immuoglobulin M
<b>IqR</b>	Interquartile range
<b>JKKK</b>	Jawatankuasa Kemajuan dan Keselamatan Kampung
<b>JKKKP</b>	Jawatankuasa Kemajuan dan Keselamatan Kampung Persekutuan
<b>KIM</b>	Komuniti Malaysia
<b>KAP</b>	Knowledge, attitude and practice
<b>KB</b>	Kota Bharu
<b>KBBL</b>	Kampung Baru Bechah Laut
<b>KBM</b>	Kampung Batang Merbau
<b>KEMAS</b>	Jabatan Kemajuan Masyarakat
<b>km</b>	Kilometre
<b>KN</b>	Kampung Nipah
<b>KNK</b>	Kampung Nelayan Kandis
<b>KR</b>	Kampung Rawa
<b>KRT</b>	Kawasan Rukun Tetangga
<b>MID</b>	Medan Info Desa
<b>MOH</b>	Ministry of Health Malaysia

## LIST OF SYMBOLS AND ABBREVIATIONS

n	Frequency
No	Numbers
PAS	Parti Islam Se-Malaysia
PHA	Public Health Assistant
PPK	Pertubuhan Peladang Kawasan
RISDA	Rubber Industry Smallholders Development Authority
RM	Ringgit Malaysia
RM ANOVA	Repeated measures analysis of variance
SD	Standard Deviation
SHD	State Health Department
SHDK	State Health Department of Kelantan
<i>spp</i>	species
UKKS	Unit Kawalan Keselamatan Kampung Sukarela Mukim Bachok dan Mukim Nipah
UMNO	United Malays National Organisation
US\$	United States dollar
WHO	World Health Organisation

## GLOSSARY

**1Malaysia Community (Komuniti 1Malaysia or K1M):** This organisation was established by the Ministry of Communications and Multimedia to implement 1Malaysia Appreciation Programme at the community level. Activities of this programme include exhibitions, village feast get-together, cultural performances and community sporting events. K1M also organises religious activities, independence celebration activities and study tours (DOI, 2012).

***Aedes* index (AI):** The percentage of houses infested with *Aedes species* (*Ae. spp*) larvae and/or pupae (MOH, 2005a; WHO, 2009) as follows:

$$AI = \frac{\text{Number of infested houses}}{\text{Number of inspected houses}} \times 100$$

**Amanah Ikhtiar Malaysia (AIM) microcredit scheme:** The primary objective of this scheme is to reduce the rate of poverty in the community by providing financial loans to poor households. The minimum amount of loan starts at RM500 with a repayment period of 25 weeks to a maximum of RM20000 with a repayment period of six months. The households are expected to use the loan to improve their household income by undertaking viable economic activities such as small trading. Loan participants are required to go through a compulsory skills development course at the point of joining the scheme after which they are required to attend weekly meetings among group members (Saad, 2011; AIM, 2012).

**Area Farmers Organisation (Pertubuhan Peladang Kawasan or PPK):** The role of PPK is to enhance rapid growth of the agricultural sector by restructuring agriculture and improving the productivity of farmers through provision of services. PPK is also responsible to enhance business and investment growth in agriculture, and improve the quality of life and socio-economic conditions of farmers (FOA, 2012).

**Breteau index (BI):** The number of positive containers with *Ae. spp* larvae and/or pupae per 100 houses inspected (MOH, 2005a; WHO, 2009) as follows:

$$BI = \frac{\text{Number of positive containers}}{\text{Number of inspected houses}} \times 100$$

**Community COMBI committee (CCC):** A group of people appointed by the Ministry of Health Malaysia (MOH) to implement Communication for Behavioural Impact (COMBI) programme activities for the prevention and control of dengue in their community.

**Container index:** The percentage of water-holding containers infested with *Ae. spp* larvae and/or pupae (MOH, 2005a; WHO, 2009) as follows:

$$CI = \frac{\text{Number of positive containers}}{\text{Number of inspected containers}} \times 100$$

**Control areas:** The areas that were not involved in COMBI programme in Kelantan.

**Daya Wawasan Movement (Gerakan Daya Wawasan or GDW):** This organisation was established by Jabatan Kemajuan Masyarakat (KEMAS) of the Ministry of Rural and Regional Development. The objectives of GDW are to make a paradigm shift in attitude, practice and inspiration among rural community (Balwi and Koharuddin, 2005).

**Development and Village Security Committee (Jawatankuasa Kemajuan dan Keselamatan Kampung or JKKK):** This committee is established by the state government as an agent of administrative and community development at the local level. The head and members of this committee are given skill training in the aspects of administration, organisation, development and management to create an independent and proactive community. They are also responsible to implement various state government programmes in their community such as economic and infrastructure developmental programme, general assistance programme, and poverty eradication programme (D'Silva *et al.*, 2009; Kuhonta, 2011).

**eDengue:.** Web-based application that is used by the MOH to monitor notification, laboratory result, re-notification, case investigation, vector control, health education activities, enforcement activities, COMBI programme activities and entomological indices of dengue (MOH, 2013b).

**Federal Development and Village Security Committee (Jawatankuasa Kemajuan dan Keselamatan Kampung Persekutuan or JKKKP):** Similar to JKKK (above), the federal government sets up its own state administrative structure with head and members of JKKKP appointed to handle socio-political affairs and execute federal government programmes at the local level (Wong, 2009).

**Medan Info Desa (MID):** This local information centre is a physical entity filled with information and communications technology (ICT) infrastructures located in rural areas. It is a systematic and integrated effort by the Ministry of Rural and Regional Development to instil and promote ICT among rural communities. Basic services of MID are ICT skills trainings, computer and internet services, computer printing and website services (Ibrahim *et al.*, 2010b).

**More than five years intervention area:** The intervention area in Kelantan where their 12-week intensive COMBI campaign ended at least five to six years ago.

**More than three years intervention area:** The intervention area in Kelantan where their 12-week intensive COMBI campaign ended at least three to four years ago.

**Neighbourhood Watch Group (Kawasan Rukun Tetangga or KRT):** This an organised group of residents devoted to crime and vandalism prevention within a community. The main role of KRT is to organise groups for patrol duty at night to reduce crime in surrounding neighbourhoods. Further, each KRT is encouraged to organise community, welfare or education activities in order to promote and strengthen racial unity and integration (DNUI, 2012).

**Rubber Industry Smallholders Development Authority (RISDA):** This federal government agency was established to create a progressive and prosperous smallholder community through agriculture and commercial activities. In order to achieve this mission, it adopts various integrated and systematic approach programme such as individual and group replanting/new planting, the setting of development centres to purchase smallholder rubbers, credit facilities for agricultural input and smallholder training (RISDA, 2012).

## ABSTRAK

Kelangsungan program Komunikasi untuk Perubahan Tingkah Laku (COMBI) dalam pencegahan dan pengawalan denggi di Kelantan.

**Pengenalan:** Program COMBI adalah salah satu langkah Kementerian Kesihatan Malaysia (MOH) mencegah dan mengawal denggi. Program ini menggunakan konsep proses mobilisasi sosial dalam menggalakkan individu dan keluarga mereka mengambil tindakan yang sesuai terhadap denggi. Kelangsungan program ini tidak pernah dinilai walaupun ia telah dilaksanakan sejak 10 tahun yang lepas di Kelantan.

**Objektif:** Kajian ini bertujuan untuk menilai status kelangsungan dan menerangkan faktor-faktor yang mempengaruhi kelangsungan program COMBI di Kelantan.

**Kaedah kajian:** Kajian menggunakan gabungan kaedah kuantitatif dan kualitatif dalam kajian komuniti yang bukan rawak dan hirisan lintang secara perbandingan. Kampung Nelayan Kandis (KNK) dan Kampung Batang Merbau (KBM) telah dipilih sebagai kawasan intervensi. Kampung Nipah (KN) adalah kawasan kawalan untuk KNK dan Kampung Rawa (KR) adalah kawasan kawalan untuk KBM. Kaedah kuantitatif pada kajian ini melibatkan data sekunder dan tinjauan tentang pengetahuan, sikap dan amalan (KAP). Kaedah kualitatif yang digunakan dalam kajian ini adalah temubual secara mendalam dan analisis dokumen. Bahagian pertama kajian ini menggabungkan kaedah kualitatif dan kuantitatif dalam menilai prestasi program COMBI sama ada ia masih berlangsung ataupun tidak sekurang-kurangnya tiga atau lima tahun selepas tamat aktiviti-aktiviti rasmi program. Empat