"Together Picket": Community Activities in Dengue Source Reduction in Purwokerto City, Central Java, Indonesia

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Abstract

This paper looks at how dengue prevention and control in Indonesia has evolved from a vertical, government-controlled programme to a more horizontal, community-based approach. The authors illustrate how social mobilization has improved Aedes source reduction by drawing upon recent experiences in Purwokerto City, Central Java.

Keywords: Dengue, prevention and control, community-based, social mobilization, source reduction, Indonesia.

Country setting and background

The Indonesian archipelago consists of five large islands - Java, Sumatra, Kalimantan, Sulawesi, and Papua - and thousands of smaller islands. Approximately 60% of Indonesia’s 210 million people live on Java island. There are 370 ethnic groups with 67 languages, but Bahasa Indonesia unites all citizens. The national economy is based on agriculture and industrial production of the country’s natural resources.

The rainy season lasts from October to March and the dry season from April to September. High temperatures and humidity favour mosquito populations with a peak in mosquito abundance in the rainy season. The major dengue vector in urban areas is Aedes aegypti but Aedes albopictus is also present. The majority of houses in Indonesia have a cement water container located in the bathroom to store water for bathing, and a smaller container in the water closet (WC). Water containers made from clay or plastic barrels/jars are also kept in the kitchen for cooking or drinking purposes. Additional water containers may act as potential breeding sites both inside and outside houses.

The first reported dengue fever and dengue haemorrhagic fever (DHF) epidemic
in Indonesia occurred in 1968, with 24 fatalities and a high Case Fatality Rate (CFR) of 41.3%[1]. Since then, dengue fever has become endemic in most areas of Indonesia with year-round transmission. DHF affects children under the age of 14 years but an increasing number of cases are being reported in older age groups. For example, 47% of all cases reported in 2000 were patients over 14 years of age.

The approach to DHF control in Indonesia has evolved considerably in the last 30 years. From 1968 to 1979, the Health Department operated a vertical programme that emphasized perifocal chemical spraying to reduce mosquito density in areas where cases of DHF were reported. A mass larviciding programme (1% temephos sand granules applied to mosquito breeding sites) was established between 1980 and 1985 but was effective only for three months of each year[2]. From 1986 to 1991, decreasing programme resources resulted in a shift to selective larviciding. An intensive physician training programme in clinical diagnosis and management of DHF has been in place since the 1970s. This programme has helped to reduce the CFR to 2%.

From 1992 until the late 1990s, attention was given to larval source reduction through increased community participation, health education and intersectoral coordination[3]. An inter-sectoral DHF Working Group (DHF-WG) was established at all administrative levels, from villages to sub-district, district, province and national level, in order to implement source reduction strategies under the guidance of local health personnel. Two programmes - Pemberantasan Sarang Nyamuk (DHF source reduction) and Bulan Gerakan 3M (Menguras = Cleaning; Menutup = Covering; and Mengubur = Burying) - were established with key health messages communicated through various media. Voluntary cadres, mostly women from the “PKK” (Family Welfare Empowerment Organization) were mobilized to conduct regular house-to-house inspections of potential Aedes breeding sites. Staff from health centres and district health offices also carried out inspections of public places every three months.

Several Knowledge, Attitude and Practice Surveys (KAP) conducted in the mid-1990s, however, showed that while the general public possessed knowledge of the 3M messages, few people were taking appropriate action. A social mobilization approach was needed that could achieve and sustain behavioural results. This new initiative, known as Piket Bersama (“Together Picket”), was first piloted in Purwokerto, Central Java. This paper focuses on “Together Picket” experiences in Purwokerto City (population of 220,000).

Planning innovation for dengue prevention and control

The initiative commenced with a pilot study in a hamlet in Purwokerto in 1996. This study suggested that Pemberantasan Sarang Nyamuk and Bulan Gerakan 3M programmes should continue but a new focus for community action was required. The study recommended the formation of dasawisma (dasa means “ten” and wisma means “house”). Each dasawisma was to have a leader, preferably a PKK representative, who would receive DHF training. Depending on their size, each urban neighbourhood was to organize approximately 1-5 dasawisma. Householders within each dasawisma were to be organized by their local leader to take turns...
inspecting each others premises for larval habitats (Figure 1).

Figure 1: Monthly meeting of a dasawisma in Purwokerto City, in which they discuss the results of their activity and make a plan for the next month

Additional planning in Purwokerto involved the establishment of partnerships between the local government, the Rotary Club, the PKK, and municipal health services. The “head” DHF Working Group, chaired by the mayor and consisting of members of the health, education and economic sectors, PKK representatives, village development units, and Rotary Club members, agreed to disseminate information and monitor source reduction activities. The Rotary Club acted as a funding agency for materials procurement and training.

Implementing the new approach

The new approach officially began in November 1997 with several meetings to inform and encourage several neighbourhoods in Purwokerto to undertake source reduction. Then, all members of the local Rotary Club received education on “Together Picket”. Rotary members became role models for others by carrying out their own household inspections. Next, meetings were held with the heads of various DHF Working Groups, the PKK, and key stakeholders from government departments to gain their support.

Supported by their local PKK representative, dasawisma then arranged a roster whereby each house took turns to inspect the other nine houses for potential larval habitats (Figure 2).

Figure 2: Dasawisma’s activity, weekly checking for larvae in a bathroom of one member of a dasawisma in Purwokerto City

Each dasawisma was provided with a “source reduction” kit containing flashlights to check the presence of larva, forms to record basic information, and education booklets containing information on the “3Ms” (cleaning, covering, and burying). Dasawisma leaders were asked to monitor and supervise the implementation of “Together Picket” in their areas and to report results to the district office. Inspections of public places such as traditional markets, public gardens, places of worship, and offices were also carried out by health centre staff and district health officers every three months. Based on initial indications that the new approach was having a higher level of behavioural impact, social mobilization and communication activities were expanded to other areas of the city between 1998 and 1999.
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Monitoring and evaluating the new approach

“Together Picket” is ongoing in Purwokerto. Dasawisma activity reports are classified into three categories (active, less active, not active) at monthly PKK sub-district meetings in a process known as the “Dasawisma Participation Map”. The leaders of PKK neighbourhoods and hamlets attending these meetings are informed of the activity level of each dasawisma. Less active or inactive dasawisma are encouraged to improve and receive closer supervision. A local sociologist also monitors all dasawisma group activity in Purwokerto through random visits to neighbourhoods. Larval surveys are conducted every three months by local health staff and DHF hospital cases are tracked. Pertinent larval survey results and any DHF cases recorded at local hospitals are reported back to the relevant village head.

The early success of this new approach can be measured by the reduction in the house index from 20% before activities began to 2% once activities were fully underway. “Together Picket” has now been adopted as a local government programme with special funding through the health sector. The Ministry of Health and Rotary Club Indonesia, with support from Rotary Club International, have recently expanded this model to 14 other cities and towns throughout Indonesia (e.g. Palembang, Cirebon, Solo, Kudus, Surabaya, and Bali).

Lessons learned

Compared to previous efforts in Indonesia, the “Together Picket” approach has shown early signs of success in reducing larval indices mainly because a few, critical behaviours have been emphasized by mobilizing very local social networks (the dasawisma), supported by key stakeholders including government and nongovernmental organizations, community leaders and experts. The Purwokerto experience demonstrates the advantages gained when programmes establish effective partnerships with existing organizations such as PKK. Monitoring and evaluation of such community-based efforts, however, need to be carefully planned and must themselves be based on principles of community involvement. Finally, the Indonesian experience over the last 30 years has shown that community consultation, time, and money are all needed if we are to sustain behavioural outcomes in dengue prevention and control.

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References

