# The success behind the Dengue Prevention Campaign in Imaduwa MOH area: An intersectoral approach

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## ABSTRACT

Dengue has become one the most important public health issues in Sri Lanka over last decade. Galle was noted as a high risk district and Imaduwa MOH area was shown a rising trend of dengue in early part of 2012. MOH office Imaduwa had conducted a successful dengue prevention campaign in line with National dengue week and the key for success was intersectoral collaboration.

Objectives of the program was to develop an optimal intersectoral collaboration to strengthen dengue control activities in Imaduwa MOH area by advocating and sensitizing relevant stakeholders, building partnership to implement dengue control activities and raising public awareness on prevention and treatment of dengue.

The program was consisted of 5 components. It started with formation of divisional dengue control committee which all the stakeholders were brought together. A public awareness program was done covering the entire MOH area with the active participation of all stakeholders. It was followed by a shramadana campaign which targeted public places, government offices, private institutes and schools. It attracted a wide public participation. Main intention was to raise public ownership in the activity and deliver the message across community. Home visit campaign to eliminate mosquito breeding places was conducted covering all high risk areas. Selected areas were fogged with the support of Pradeshiya sabha.

All the stakeholders from different sectors gave their fullest support and the program attracted a wide public participation. Reduction of dengue cases in Imaduwa MOH area as a whole and especially in high areas risk areas were noted following the program. Intersectoral collaboration and building partnership were identified as vital factors for the success of this program.

## Introduction

Dengue is a vector borne viral disease which is transmitted by *Aedes* mosquito. It is an *Arbo* virus which causes flu-like illness and occasionally leads to life threatening complications like dengue haemorrhagic fever and dengue shock syndrome. Over the last 50 years dengue has spread over most of the tropical and subtropical areas, worldwide (1).

Dengue has emerged as one the most important public health issues in Sri Lanka over the last decade. Since the year 2000, more than 5000 cases have been reported each year and the year 2009 was marked as the worst year with the highest mortality and morbidity. In 2011, 735 cases were reported from the Galle district while 28473 cases were reported from the entire country. In the same year four dengue related deaths occurred in the Galle district (2).

Imaduwa is a MOH area in the Galle district which reported relatively less morbidity and mortality over the past few years. But in 2011, 26 cases and one death were reported from Imaduwa showing marked changes in geographical distribution of the disease (3).

Up to the end of April 2012, six cases have been reported from the Imaduwa MOH area. Five of them belonged to Agulugaha PHI area while the other patient was detected from Imaduwa.

There are four PHI areas in Imaduwa; Agulugaha, Dikkubura, Hawpe and Imaduwa. It indicated a clustering of cases as showed by spot map. With the start of south west monsoon we expected a rise of case load.

MOH office Imaduwa planned a special dengue prevention campaign in line with National Dengue week (from 14th May 2012 to 20th May 2012) as guided by the Ministry of Health. The aim of the programme was to enhance the public awareness on the prevention and treatment of dengue and to reduce the incidence of dengue in the area by strengthening inter-sectoral collaboration.

Main objective of this programme was to develop an optimal inter-sectoral collaboration to strengthen dengue control activities in Imaduwa MOH area. Relevant stakeholders were advocated and sensitized to build a good partnership. Public awareness was raised on prevention and treatment of dengue.

**Methods**

1. Formation of a divisional dengue control committee

   In the view of establishing an inter-sectoral collaboration and building partnerships, divisional level stakeholders were convened on 12th May 2012. Firstly, participants were sensitized about the issue. Depth of the problem at national and local levels as well as the need of a coordinated approach to face the challenge was explained by the Additional MOH (AMOH). Advocacy was done to ensure sustainable support from all the stake holders.

   Action plan for the Dengue Week was drafted and responsibility of each activity was handed over to each party. Public awareness campaign, Shramadana programme, home visit campaign and fogging were planned and role of each party in carrying out those activities were defined. Strategies were planned according to the principals of integrated vector management, which is known as the most effective approach for vector control activities (4). Date for the next meeting was fixed.

2. Public awareness

   Public awareness campaign was carried out during the first two days of the week. Gravity of the problem, importance of eradicating breeding places and basic management steps of dengue patients were included into the message. This was done by using vehicle mounted public addressing systems. Different partners were given the responsibility of conducting public awareness in each PHI area of Imaduwa. A common message was drafted by PHIs and delivered among them.

3. Shramadana campaign

   This was done to cover public places, government offices, private institutes and schools. It attracted a wide public participation. All institute heads were requested to continue this once a week even after the Dengue Week.

4. Home visit campaign to eliminate mosquito breeding places

   Agulugaha and Imaduwa PHI areas were chosen for house visit programme during the Dengue Week. Selection was done based on the geographical distribution of cases in the current year as mentioned above.

   DS office coordinated the work force for the campaign. A group of newly assigned graduates (n=120) were recruited. All Gramaniladaris, Samurdi officers and agricultural officers were involved in respective areas. Altogether 141 people involved. Five teams consisted of two members were deployed for each Gramaniladari (GN) division. Special training programme was conducted by AMOH for all the participants prior to the campaign through lecture discussion. They were explained on how to detect mosquito breeding sites and necessary actions to be taken. All households in the area were expected to cover. Pradeshiyasabha sponsored refreshments and printed material.

   Each household was given an information leaflet and a check-list which was prepared by MOH office under the guidance provided by Epidemiology unit. Pradeshiyasabha took the responsibility of printing adequate number of copies. People were requested to keep the check

list and mark it weekly. Special stickers were designed for the programme. Blue stickers were pasted in safe houses and red stickers were pasted in at risk houses. Presence of three or more breeding places was considered as 'at risk' household.

We assumed that each team which consisted of two members could visit 20 households and deployed a group consisted of 10 members for each GN division. We expected them to cover minimum of 200 houses in each GN division within one day. Three main government officials who were appointed at the GN level were GN, Samurdhi officer and agricultural officer. They were given the responsibility of coordinating the activity. During the programme 1625 houses in Agulugaha and 599 houses in Imaduwa were visited.

5. Fogging

Selected areas were fogged. The commercial preparation 'Pestguard' (containing Detetramethrine and Xyphenothrine) was used. It was carried out with the support of Pradeshiya--sabha. Kerosene (as solvent) and transport facility were provided by them.

**Results**

1. Formation of Divisional Dengue Committee

A representative of Chairman of Pradeshiya--sabha, a representative of Divisional Secretary, Divisional Director of Education, a representative of the officer in charge of police and public health inspectors participated in the meeting which was chaired by Additional Medical Officer of Health (AMOH) of the Imaduwa MOH area.

2. Public awareness

There are four PHI divisions in Imaduwa MOH area as mentioned above and they were covered as follows. Dikkubura PHI division was covered by police while MOH office took the responsibility of covering Imaduwa PHI area. Pradeshiyasabha carried out public awareness in Agulugaha and Hawpe PHI areas. By dividing the task all areas were easily covered within 2 days.

3. Shramadana programme

Under the coordination of Divisional Secretary office all government offices in Imaduwa area conducted Shramadana on 17th May. PHIs monitored the activity. Shramadana in private offices and factories were done under the guidance of police on the same day. PHIs again supervised them. Shramadana in all maternal and child health clinic centers were carried out by 'Mawusamaja' members (who are a volunteer work force). Public health mid-wives coordinated the activity which happened on 16th May. Under the coordination of Divisional education director all schools in Imaduwa MOH area conducted shramadana with the participation of students and parents on 18th May. PHIs visited all schools and delivered a short health talk on dengue at the morning assembly (as planned before). Twenty out of 23 schools in the Imaduwa MOH area successfully conducted Shramadana. This was a remarkable activity as we intended to use students to deliver the message across community. Pradeshiyasabha took measures to clean up public places like bus stand, cemetery and lands beside main roads.

4. Home visit campaign to eliminate mosquito breeding places

Houses numbering 148 from Angulugaha were found as "at risk" places and 96 notices were issued by PHIs. In Imaduwa 30 "at risk" households were detected and 22 notices were distributed. Follow up visits for "at risk" premises were done by PHIs in subsequent weeks.

5. Fogging

Angulugaha and Imaduwa town areas were covered on 17th and 18th May.

Incidence of dengue in Imaduwa MOH area drastically reduced within the next 3 months though numbers of Dengue cases went up in adjacent MOH areas. Only four cases were reported from the entire MOH area and Angulugaha PHI area which showed the highest incidence in the first quarter reported zero cases.

**Table 1: No. of Dengue cases in Imaduwa MOH area in the first half of 2012**

| PHI Area | Reported cases from Feb – Apr | | Reported cases from May – July | |
|---|---|---|---|---|
| | N | % | N | % |
| Agulugaha | 5 | 83.3 | 0 | 0.0 |
| Imaduwa | 1 | 16.7 | 1 | 25.0 |
| Hawpe | 0 | 0.0 | 1 | 25.0 |
| Dikkubura | 0 | 0.0 | 2 | 50.0 |
| **Total** | **6** | **100%** | **4** | **100%** |

## Discussion

Intersectoral collaboration and building partnership are vital factors for the success of any public health programme. Especially in the case of dengue prevention multi-sectoral approach and community participation become crucial factors. Work force, existing community networks, available funds and legislative powers are essential factors in carrying out a public health intervention which were utilized strategically in conducting the programme. By developing a good collaboration with those stakeholders MOH office is fortified with vast amount of resources.

Though it was not much relevant in Imaduwa area, business community and private sector industries also should be included, wherever relevant. Advocacy and sensitization of key stakeholders helped in ensuring a good support and motivation of all sectors. Public relation skills and communication abilities matter in achieving these. Though they are personal factors they can be trained and it is a part of undergraduate and postgraduate curricula of public health.

Handing over responsibilities to each party made the sense of ownership in the programme. It made sure that all aspects were covered and not to miss any of activity. Principals of intergraded vector management were followed in planning activities. It is regarded as the most effective approach for vector control to yield a maximum output from available resources in a sustainable way. IVM is recommended by the WHO to use in any setting.

Gaining public support and empowering people to take the leadership is very important for success in the battle against dengue. So it was set for first two days of the week. A common message was developed to maintain the uniformity. Content of the message included sensitization of public and targeted for behavioral change of people. To reduce mortality, secondary prevention was also stressed in the message.

Again Intersectoral collaboration was successfully utilized in carrying out the activity. Because of that we could reach nearly 100% coverage of population within two days. Though just a single dose of message might not enough it had to be concluded within two days due to constrain of resources.

Abundance of breeding places in public premises and offices were identified as a major obstacle for dengue prevention in the recent past. So Shramadana campaign was planned to cover such places. Main intention was to raise public ownership in the activity. Again major stakeholders were given responsibility of coordinating the activity in various sectors and it became a success as well. Divisional secretary was requested to oversee the activity in government offices while police were asked to organize Shramadana in private offices and factories. Rather than directly requesting through MOH, this strategy was implemented to enhance the compliance.

The school Shramadana programme was a remarkable activity as we intended to use students to deliver the message across community. Resources of Pradeshiyasabha were utilized to clean public places where it was difficult to mobilize public. Mawusamaja volunteer work force was also mobilized in this programme. As there is a well established network of Mawusamaja we expected the message to spread to the household level of the community.

Eliminating breeding places is regarded as the mainstay in vector control for *Aedes* mosquito (1). Having recognized that the climax of the dengue week was the home visit campaign to eliminate mosquito breeding places. Rather than covering the entire MOH area we chose Agulugaha and Imaduwa PHI areas which showed a higher risk of an outbreak as mentioned in the introduction. Near complete coverage, which is another important aspect for a successful public health campaign was also kept in mind when deciding to restrict the programme to high risk areas at first leg. Epidemiological information and spot map were used to determine areas for the targeted intervention.

A special training was given to the entire team of graduates and other government officers prior to the programme as explained in the methods. By providing technical knowledge on detecting mosquito breeding places it was expected to enhance the effectiveness of programme and maintain uniformity. A checklist was used to standardize the house visits. Every household was requested to maintain the list by reviewing it weekly. People were advised to produce it whenever a PHI visit. It gave the ownership of the programme to the public.

Space spraying, which is better known as fogging should be used very cautiously in dengue control. In Integrated Vector Management, it is advised to use fogging, minimally in an areas with high case load (4) as it only kills adult mosquitoes while causing a significant harm to human health and animal life. It should be used as a supplementary to cleaning activities. Due to this, fogging was done in Imaduwa and Agulugaha town areas on the day prior to respective house visit campaigns. Intersectoral collaboration with district health authorities and local government authority made this activity a success.

In conclusion, Intersectoral collaboration can be successfully used at divisional level for dengue prevention. A good partnership between MOH and other government authorities at divisional level is a crucial factor in achieving a success. The effectiveness of all the control measures we routinely practice can be enhanced with intersectoral collaboration. Advocacy and public relation skills are important in developing this at any level.

The success of this approach can be changed when it is implemented in a different setting with poor relationship between stakeholders and larger geographical area. Maintaining the enthusiasm and partnership is a challenge. Sustainability of the programme can be assessed only after tracking the results over a longer period of time.

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