

Meeting the Dengue Fever Challenge

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Commentary

Dengue Fever is a rapidly increasing public health challenge in currently dengue endemic countries and becoming an emerging disease in previously naive countries due to climate changes favoring the Aedes mosquito breeding. It is estimated globally that around 50 million new dengue infections occur annually with an estimated 2.5 billion individuals living in dengue endemic countries [1]. However, it is believed that these figures are an underestimation due to the lack of Dengue infection confirmatory tests in many dengue endemic developing countries.

The Aedes mosquito has adapted extremely well to the urban environment so much so that it can be considered as the 'perfect urban terrorist' requiring only 5 cc of clear standing water to breed. This coupled with the existence of transovarial transmission of the Dengue Virus and the hardiness of the Aedes mosquito eggs that stick to the edge of water containers and can withstand desiccation for 6-months, makes effective control of Dengue Fever that much more challenging.

Effective control of Dengue Fever requires effective collaboration and 'buy-in' by the local community towards eliminating Aedes mosquito breeding & potential breeding sites ('source reduction'). However, the common public perception that insecticide space spraying ('fogging') is the solution to control of Dengue Fever makes the task of source reduction difficult and also in some measure, dilutes the community's responsibility in dengue control activities.

In most developing countries, the source of Dengue Fever transmission is clear as the breeding sources are related to obvious unsafe water storage practices, indiscriminate littering, weak waste collection and disposal services and poor environmental sanitation. However to address these obvious risk situations requires much advocacy and networking with local community organizations, governmental and non-governmental agencies and the private sector.

To facilitate the focus on source reduction as the key tool to meet the challenge of Dengue Fever, it is recommended that the Dengue Control Programme be clearly delineated to 2 distinct initiatives: Dengue Case Based Activities and Dengue Prevention Activities. Dengue Case Based Activities, that includes insecticide fogging and larviciding, is a technical issue best left to the health staff in the local district health office or local authorities.

However, the most effective solution to the dengue public health challenge is sustained emphasis on Dengue Prevention Activities that includes all activities to prevent Aedes breeding on a '24/7' basis and thus preventing the 1st dengue case at a risk locality. This basically boils down to a sustained cleanliness culture at home, work and the environment thus placing the main responsibility of Dengue Prevention on the local communities and other related stakeholders and not solely on insecticide fogging activities by the Health Departments.

Although Dengue Fever prevention activities look deceptively simple but in reality this requires sustained community advocacy and engagement, tied together with periodic Aedes breeding audits and consistent enforcement of legislative rules against Aedes breeding by the health departments. Health education measures should be tailored to different age groups and use different modalities such as mass media, pamphlets, posters, health talks and social media (such as Facebook, Twitter, Whatsapp, Twitter) to achieve effective community engagement. Local community organizations such as Anti-Dengue Teams & Communication for Behavioral Impact - COMBI initiatives [2] also play a significant role in reducing Aedes mosquito breeding in the community.

In summary, Dengue Programme should move from a mosquito focus approach to a 'cleanliness culture' that is more broad based and empowers the local community to play an active role in dengue prevention initiatives. Catchy slogans such as 'Cleanliness Every day, Every time, Everywhere' should be the new battle cry for the fight against dengue fever in these at risk communities.

References

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