

Dengue-curbing programme being extended to five more residential areas

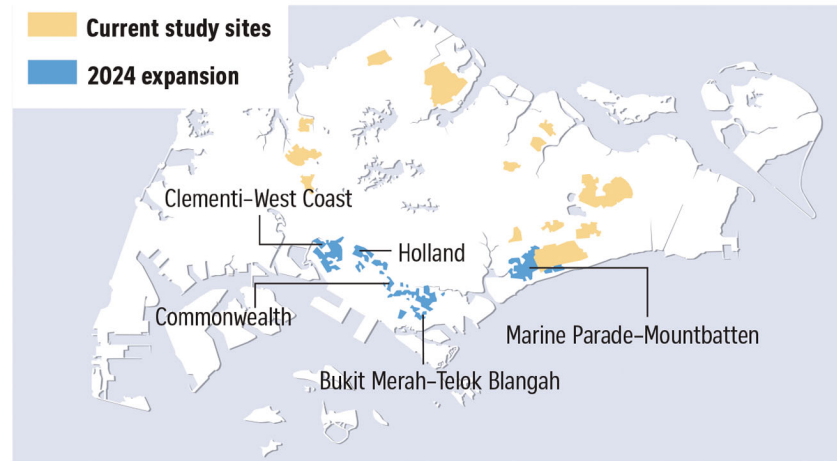
Shabana Begum

From early 2024, five more residential areas will be covered by a dengue-curbing programme that releases lab-grown male mosquitoes to suppress the population of disease-carrying mozzies.

Project Wolbachia, as the programme is called, will be expanded

Expanding the fight against mozzies

From early 2024, Project Wolbachia will be expanded to five more residential areas to cover 35 per cent of homes here.



Source: NATIONAL ENVIRONMENT AGENCY STRAITS TIMES GRAPHICS

to Bukit Merah-Telok Blangah, Clementi-West Coast, Commonwealth, Holland and Marine Parade-Mountbatten, after positive results from ongoing field studies.

The male Wolbachia bacteria-carrying *Aedes aegypti* mosquitoes will be released in these residential sites from the first quarter of 2024, increasing the coverage to 480,000 households, from 350,000 currently.

This means that 35 per cent of all homes in Singapore – including HDB and landed estates – will be covered under the programme.

Announcing the expansion of the programme on Nov 21, Senior Parliamentary Secretary for Sustainability and the Environment Baey Yam Keng, who was speaking at the International Vector-Borne Diseases Conference, said: “In the last four years, residents in areas with at least one year of releases were up to 77 per cent less likely to be infected with dengue.”

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More than one million residents have benefited

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Those areas include Tampines and Yishun. Thirteen residential areas have been covered under the programme.

The National Environment Agency (NEA) said the five new locations were chosen based on historical dengue risk, the Aedes mosquito population, and the agency's capacity for producing and releasing male Wolbachia-Aedes mosquitoes.

Associate Professor Ng Lee Ching, group director of NEA's Environmental Health Institute, noted that as a sizeable number of dengue cases in study sites were isolated and not linked to clusters, infected individuals could have acquired dengue elsewhere rather than within the release sites.

But while the programme has led to the Aedes mosquito population falling by more than 90 per cent in some areas, it has been observed that Project Wolbachia's impact on mosquito population and dengue varied across sites and years, added Mr Baey at the conference.

NEA is also using data analytics and artificial intelligence as a predictive tool to adjust the number of male mosquitoes at each site.

"This helps to optimise our deployment strategy and reduce the number of male mosquitoes needed to support dengue suppression in these areas," said Mr Baey.

In his presentation on Singapore's dengue control efforts, Dr Chong Chee Seng from the Environmental Health Institute said differences in the way buildings are designed and structured also affect the release of

Wolbachia-Aedes mosquitoes.

NEA plans to develop an additional source that can supply more Wolbachia-carrying mosquitoes, to increase the programme's capacity as it expands. Currently, the mosquitoes are supplied by the agency and Verily Life Sciences.

NEA said it will engage the industry on this matter.

Currently, about seven million Wolbachia-Aedes mosquitoes are produced every week. With the expansion, 11 million mozzies will be produced.

Project Wolbachia started in 2016. Under the programme, non-biting male mosquitoes, infected with the Wolbachia bacteria, are released across the city to mate with uninfected females, producing eggs that do not hatch, to reduce reproduction of their kind.

As at May, more than one million residents have benefited from the programme.

While Project Wolbachia is a novel solution, it is not a silver bullet to prevent dengue outbreaks, said NEA.

"The presence of Aedes mosquitoes, ongoing circulation of multiple dengue virus serotypes, and low population immunity will continue to challenge dengue control efforts," noted the agency, reminding residents to continue removing stagnant water and take steps to prevent getting bitten.

So far, more than 8,740 dengue cases have been recorded in 2023, around a quarter of the 32,325 cases recorded in the whole of 2022, which saw a major outbreak.

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Under Project Wolbachia, non-biting male mosquitoes, infected with the Wolbachia bacteria, are released to mate with uninfected females, producing eggs that do not hatch, to reduce reproduction of their kind. ST FILE PHOTO