Resistant mosquitoes may fly in to fight dengue in Australia

June 16 2014

Australian scientists said Monday they want to fight dengue fever—which is spread by mosquito bites—by releasing more of the buzzing, flying insects into the environment.

The mosquitoes released would be resistant to dengue and expected to quickly infiltrate the insect population in the Queensland city of Townsville and stop the spread of the disease.

Small-scale trials have already been conducted in communities in northern Australia, but coastal Townsville, with its population of 189,000, would be the first time an entire city had been targeted.

Professor Scott O'Neill from Monash University, who will meet with the Townsville community on Monday, said he hoped to begin the city-wide trial by the end of the year if given support.

"This will be the first-large scale trial of our method and we are committed to being open and responsive with the Townsville community about our research," he said.

In the trials, mosquitoes infected with a bacteria called Wolbachia were introduced in small numbers to communities in northern Australia.

Research has shown that Wolbachia prevents mosquitoes from transmitting dengue. The idea is that over time the Wolbachia mosquitoes breed out the dengue-carrying ones.

"The science has been very good and it's looking very promising," O'Neill told ABC Radio.

If the Townsville model is successful, O'Neill hopes the method could be used around the globe to combat the disease, which the World Health Organisation estimates may be infecting up to 50-100 million people each year.

"We could have a very sizeable impact on dengue fever around the world and hopefully one day contribute significantly to eliminating it," O'Neill told the ABC.

Dengue is a mosquito-borne infection found in tropical and sub-tropical regions. There is no vaccine, so prevention focuses on mosquito control.

"We've just had an outbreak in northern Queensland of over 170 dengue cases—which is small on a global scale—but still 170 cases too many," said Gary Eddiehausen, who is chair of the Townsville community group looking at the plan.

"We now have an opportunity in Townsville to consider how we may be able to assist in reducing possible future dengue outbreaks in our own backyards—and being part of something that reaches so much further."

Dengue is transmitted by the Aedes aegypti mosquito, which can pick up the virus from an infected human and transmit it to the next person it bites.