

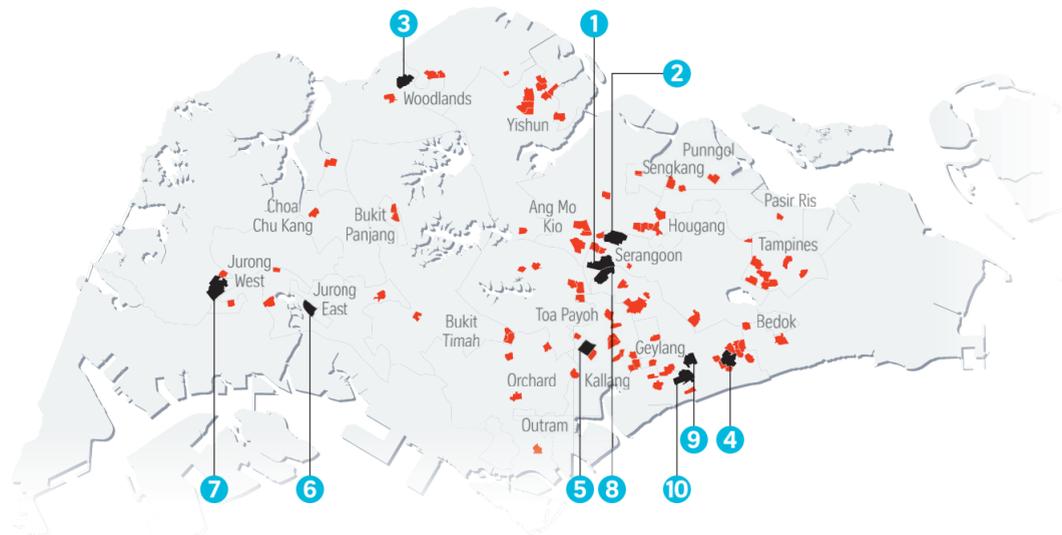
The dengue scourge

Dengue cases have been on the rise since the turn of the year, threatening to hit a record high of over 30,000 by the end of this year. LIM YONG and TANG WEE CHEOW look at the spread of the virus and what people can do to fight dengue.

TOP 10 DENGUE CLUSTERS

Cumulative cases since Jan 3 this year **5,013***

- 1 Around Ang Mo Kio Avenue 1
- 2 Serangoon North Avenue 1
- 3 Marsiling Road and Marsiling Rise
- 4 Estates near the intersection of East Coast Road and Frankel Avenue
- 5 McNair Road
- 6 Jurong East Street 13
- 7 Jurong West Streets 71 and 81
- 8 Serangoon Avenue 2
- 9 Joo Chiat Terrace and Joo Chiat Place
- 10 Estates near the intersection of Haig Road and Dunman Road



FACTS & FIGURES

In Singapore **1.4 million** checks conducted by NEA last year

19,000 Cases of mosquito breeding uncovered last year

Highest number of dengue cases to date: **22,170** in 2013

\$2.5 million Annual sum allocated for research on controlling the mosquito population and dengue surveillance

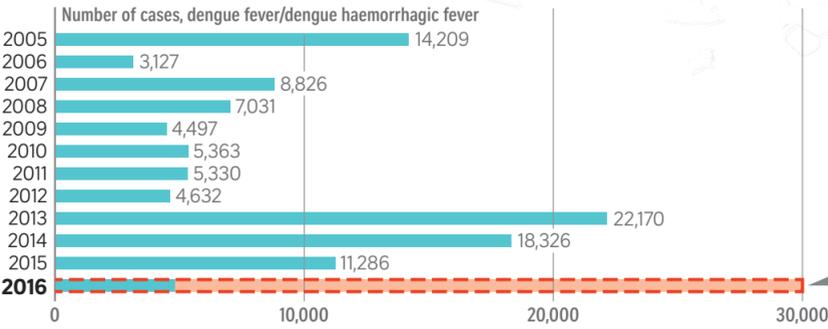
\$200 fine for homes found breeding mosquitoes from March 14 – within or outside dengue clusters

The mosquito can lay eggs – **up to 100** each time – about three times in its lifetime

Its eggs can lie dormant in dry conditions for **up to 9 months** and can still hatch afterwards

WHO says that urban dengue outbreaks have risen **30-fold** between 1960 and 2010 due to the influx of people, increased construction and the ongoing travel of humans and mosquitoes around the world

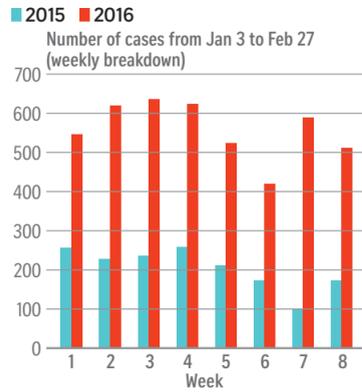
RECORD DENGUE CASES EXPECTED



NOTE: *Information accurate as of March 8, 2016

Prospect of hitting a record high this year?

- Warmer conditions arising from last year's El Nino phenomenon foster faster breeding and maturation cycle of the Aedes mosquito that spreads the dengue virus.
- There has been a 50 per cent jump in the number of Aedes mosquito-breeding sites in homes compared with the same period last January.



COMMON AEDES MOSQUITO BREEDING AREAS

The most effective way of fighting dengue is source reduction – getting rid of stagnant water where mosquitoes can breed.

HOMES (HDB and private residences)

CONSTRUCTION SITE

KITCHEN/SERVICE YARD

Cover **bamboo pole holders** when not in use.

• Empty **all pails and containers** and store them upside down.
• "Mosquito-proof" pails by **drilling holes in the rim of a pail** to allow water to drain quickly.

LIVING ROOM

• Change water in **vases and bowls** on alternate days.
• Scrub the inside of vases and flush roots of plants with running water to remove mosquito eggs.

• Remove residual water from **plant pot plates**.
• Scrub the plates to remove mosquito eggs.
• Avoid using the plates if possible.

TOILET/BATHROOM

• If going on holiday, cover **toilet bowls and gully traps** (or install anti-mosquito valves) and treat them with sand granular insecticide.
• Seal off the overflow pipes of flushing cisterns.

BEDROOM

Check and clear blockages and put insecticide in **roof gutters** monthly. If possible, remove the roof gutters.

Remove **air-conditioner trays**. Redirect condensed moisture to bathrooms or toilets.

• Check and remove blockages in the **apron and scupper drains** (along common corridors).
• Do not place potted plants and other items over the latter.

GARDEN

Turn **watering cans and receptacles** over and store them under shelter.

• Clear fallen leaves in **gardens** once a week.
• Check **plants** for possible water collection points.

CONSTRUCTION SITE

• Check and remove stagnant water on **canvas sheets** used for covering goods or articles placed outdoors.
• Overturn **pails and water storage containers** when not in use.

Apply **insect repellent** and wear **long-sleeved shirts and pants**.

NOTE: All pesticides and repellents sold in Singapore and registered with NEA should have a registration mark starting Feb 1 this year.

HOW A MOSQUITO INFECTS PEOPLE

- Someone gets bitten**
An Aedes mosquito bites a woman with dengue. The virus incubates for seven days.
- Incubation is complete**
Seven days later, the virus can be passed on to the next person.
- Infection takes place**
The mosquito bites a man. However, the virus needs time to incubate and the person will show no symptoms.
- Symptoms develop**
On average, symptoms start appearing four to seven days after infection.
- Vicious circle**
During the fever period, the man can pass on the virus to a second Aedes mosquito when it bites him. The cycle is repeated when this mosquito bites yet another person.

DENGUE FEVER SYMPTOMS

- Intense headache with pain behind the eyeballs
- High fever (up to 40.6 deg C)
- Body rash appears on day 3 or 4
- Nausea and vomiting
- Severe joint and muscle pain

Dengue haemorrhagic fever is more serious and potentially fatal. Symptoms include:

- Severe bleeding from the nose, gums or under the skin, causing purplish bruises
- **Dengue shock syndrome – the most severe form of dengue fever – usually occurs in children having a reinfection.**
- If the drop in the volume of blood is too severe, the person can go into shock and die.

THE MOSQUITO LIFE CYCLE

- Egg**
Female mosquitoes lay 100 to 250 eggs individually or in clusters on the surface of small confined areas of water. Most eggs hatch into larvae within two days.
- Larva**
There are four larval stages. The larvae live in the water and come to the surface to breathe.
- Pupa**
In about 10 days, the larva changes to a pupa and develops adult features. Two days later, an adult mosquito emerges.
- Adult**
A female usually mates only once.