Dengue mosquito eliminated from Tennant Creek ...... again!
William Pettit and Nina Kurucz, CDC, Darwin

Abstract

This article summarises the recent successful program to eliminate an incursion of the dengue mosquito, Aedes aegypti, from Tennant Creek in the Northern Territory.

Key words: Ae. aegypti; dengue; mosquito; elimination

Background

The Department of Health (DoH) has successfully eliminated the dengue mosquito, Aedes aegypti, from Tennant Creek for the second time. The latest elimination program in the town began in November 2011 following the detection of Ae. aegypti eggs in an oviposition trap which was part of the Northern Territory (NT) exotic mosquito surveillance program. The elimination program was completed at the end of April 2014 when the Medical Entomology unit was certain that elimination had been achieved. It is the third successful DoH program of its type in the NT following similar dengue mosquito elimination programs in Tennant Creek (2004 to 2006) and Groote Eylandt (2006 to 2008).

Tennant Creek control program and discussion

The initial control program inspection found the dengue mosquito breeding in 146 properties in Tennant Creek (13.6% of those inspected). It was found breeding primarily in discarded containers holding rainwater, but was also encountered in other water filled receptacles such as buckets and drums.
pet water containers, rainwater tanks, tyres, fishponds without fish, un-maintained pools and spas, plant cutting buckets, disused evaporative coolers, birdbaths and pot plant drip trays. The decrease in the *Ae. aegypti* population was dramatic over the first 3 rounds of property inspections (Figure). Since the commencement of this elimination program, field officers have conducted close to 9000 property inspections in and around the town searching for mosquito wrigglers and treating receptacles where the mosquito could breed. There are around 1200 properties in the town which include occupied residential blocks, vacant blocks, vacant houses, industrial businesses and rural blocks. There are an additional 107 residential properties and building structures on the 7 Aboriginal community living areas (town camps) surrounding Tennant Creek. The last detection of the dengue mosquito in the town was in June 2013, but because this mosquito can persist in the form of drought resistant eggs the program was continued through to the end of the subsequent wet season.

Up until the detection of an infestation of *Ae. aegypti* in Tennant Creek in 2004, establishments of this species had not been detected in the NT since 1956 when it was reported in settlements between Darwin and Newcastle Waters. The disappearance of *Ae. aegypti* from the NT after the 1950s coincides with a general reduction of water tanks, drums and buckets as town water supplies became reticulated, steam trains were replaced with diesel versions, and fire water buckets and drums were replaced with fire extinguishers.

*Ae. Aegypti* however, is periodically detected at NT ports associated with cargo imported from south-east Asia and there is always a risk of it being brought across from Queensland where it is widely distributed. Early detection of an exotic mosquito infestation provides DoH with an opportunity to control and eliminate it before the mosquito can become widespread throughout the Territory. The NT exotic mosquito surveillance program is one of the very few successful programs in the world able to maintain an *Ae. aegypti* free status in a demonstrated vulnerable and receptive geographic area for over 35 years.

**Conclusion**

The recent elimination of *Ae. aegypti* from Tennant Creek means that the NT is once again *Ae. aegypti* free and there is no longer a threat of

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Figure. *Ae. aegypti* positive properties in Tennant Creek (Nov 2011-Apr 2014)
dengue being able to be transmitted in the NT. Furthermore, there is no further risk of this mosquito species being spread from Tennant Creek to other centres in the NT or Western Australia. In Australia, the distribution of *Ae. aegypti* in Australia is once again restricted to Queensland.

**Acknowledgements**

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References

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**Measles update**

*Sophie Lines, GP Registrar trainee, CDC, Darwin*

As of 23 June 50 cases of measles have been notified in the Northern Territory (NT) in 2014.1 Following the NT measles outbreak which totalled 48 cases starting in mid-January and ending mid-March this year2, there have been 2 further measles cases, both in travellers returning from Bali in the month of June. Recent cases have also been reported in Queensland, Victoria, WA, Tasmania and SA, with 40 cases reported nationally over the period 1 May–23 June 2014.3

As of 23 June there have been a total of 227 measles cases notified nationally in 2014, with 45% (n=85) of these cases acquiring their disease overseas and 32% (n=68) able to be linked to these imported cases. Of these nationally reported cases, the 15-19 year and 30-34 year age groups represented over a third of cases and 9% of cases (n=18) were in those aged less than 12 months.3

The NT Centre for Disease Control has launched a campaign to promote heightened measles awareness in the community. The campaign particularly targets adults and encourages them to be up-to-date with their immunisations which, for measles, means making sure they have had 2 doses containing vaccines. A very high risk group for getting measles at any age if non-immune is overseas travellers, as they are much more likely to be exposed in airplanes, airports and overseas countries. Make sure all overseas travellers who are uncertain of their immune status take advantage of getting a FREE measles vaccine prior to travel to avoid getting sick overseas and/or bringing measles back with them to the NT.

References

1. Northern Territory Notifiable Disease System (NTNDS).