

## Short reports

# SURVEILLANCE OF POTENTIAL RABIES EXPOSURE IN AUSTRALIAN TRAVELLERS RETURNING TO SOUTH EAST QUEENSLAND

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## Introduction

Rabies is endemic in animals in many parts of the world, including much of Asia, the Americas, Africa and Europe. Each year, rabies kills approximately 55,000 people worldwide, most of whom are children.<sup>1</sup> Australia currently remains free of rabies. However in late-2008, rabies was confirmed for the first time in dogs with subsequent human cases in one of our most popular travel destinations, Bali, Indonesia.<sup>2</sup>

Health authorities have recommended post-exposure treatment for potentially exposed returned travellers from Bali, Indonesia, from 1 August 2008. These travellers should receive appropriate post-exposure treatment as per the Australian Immunisation Schedule.<sup>3</sup>

This report summarises potential rabies exposure incidents that have been reported to Public Health Units in the south Brisbane region of Queensland, from January 2008 to the end of April 2012.

This region covers the geographic areas of south Brisbane, Logan and West Moreton, where approximately 1.3 million people reside.

## Method

Enhanced surveillance of returned travellers, resident in the geographical region of the Brisbane South and Logan West Moreton Public Health Units, who were bitten or scratched by animals in rabies endemic countries, was conducted in accordance with chapter 3 of the (Queensland) *Public Health Act 2005*.

Travellers with a rabies exposure prone injury were reported to the Public Health Unit via their health professional and/or were self-reported. Data were collected using a standard case report form and included information relating to the type and circumstances of injury, geographic location and treatment.<sup>4</sup> De-identified data were stored in an SQL server database and collated for analysis using Crystal Reports.

## Results

Since 2008, 136 travellers with potential rabies exposure from animal bites or scratches have been reported to our public health units. Ages ranged from 2 to 65 years with 42% in the 20–29 year age range. Eighty-four per cent of travellers potentially exposed to rabies reported being bitten ( $n=114$ ) while the remainder reported scratches or other non-bite exposures ( $n=22$ , 16%).

Animals most commonly responsible for injuries were monkeys ( $n=76$ , 56%) and dogs ( $n=41$ , 30%), followed by cats ( $n=10$ , 7%). Nine people (7%) reported an injury that was due to either a rodent, squirrel, mule, tiger or antelope.

Potential exposures occurred in a wide range of geographic locations. Most were from Indonesia ( $n=54$ , 40%), Thailand ( $n=30$ , 22%), India ( $n=8$ , 7%) and China ( $n=7$ , 5%). Of those exposures that occurred in Indonesia, 52 (96%) occurred in Bali with 46 (88%) due to an encounter with a monkey and 3 (6%) due to an encounter with a dog. The remainder were due to contact with other mammals.

Of the 136 returned travellers with potential exposure to rabies, 52 (38%) encounters involved deliberate animal interaction, 38 (28%) were the result of an unprovoked animal attack and 4 (3%) were due to accidental exposure. Only 11 (8%) people had received complete pre-exposure vaccination and only 43 (32%) people were up-to-date with their tetanus vaccination at the time of exposure.

Forty-two people (31%) received appropriate first aid (washing of the wound with soap and water for 5 minutes) at the time of injury. The average time between exposure and commencement of treatment was 17 days. However, if people who received their treatment after 60 days ( $n=6$ , 4%), were removed from the analysis the average time between exposure and commencement of treatment was reduced to 7 days.

Sixty-three travellers (46%) commenced their treatment overseas and of these only 5 (4%) received immunoglobulin overseas. Seventy-three travellers

(54%) received their full course of post-exposure prophylaxis in Australia, as per the recommendations in the Australian Immunisation Schedule.

## Discussion

There may be under-reporting of non-bite exposures, particularly from returned travellers who visit newly rabies endemic areas such as Bali, Indonesia. The data show that Australian tourists abroad do not understand, or choose to ignore the potential risks involved in deliberate interactions with animals, even animals that they may assume to be 'safe' (e.g. temple monkeys). This is despite travel advice that urges visitors to Indonesia, in particular Bali, to avoid direct contact with dogs, cats, monkeys and other animals.<sup>5</sup>

The data also show that commencement of post-exposure prophylaxis is often delayed or incompletely initiated overseas, with the consequent risk of developing rabies. This may be due to the fact that complete post-exposure rabies treatment in Indonesia may be limited, requiring travel to another country for adequate treatment.<sup>5</sup> Other reasons for delay may include lack of awareness among travellers about the importance of potential rabies exposures and the requirement for treatment.

Concerns around the adequacy of documentation of treatment initiated overseas, may also result in a traveller requiring further doses of rabies vaccine to ensure adequate coverage. There is also the potential risk of tetanus and wound infection if people are not adequately assessed following an exposure to a rabies prone injury.

## Conclusion

We recommend that there should be better education of Australian travellers to rabies endemic areas. Travellers should be informed about the risk of bites and scratches from animals, the importance of avoidance and the opportunity for pre-exposure vaccination, including ensuring tetanus vaccination

status is up-to-date. In particular, our data show that travellers to Bali should be advised about pre-exposure vaccination and associated risks with visiting monkey temples. Further research may be required to assess the best way to maximise these messages to Australian travellers.

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