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MASSEY UNIVERSITY TE KUNENGA KI PŪREHUROA
UNIVERSITY OF NEW ZEALAND

Vector-borne Disease Notifications in New Zealand

Monitoring the travel-related factors of vector-borne disease helps to determine whether the cases are contracting the disease outside or within New Zealand. However, to track the exposure to pathogens, it is important to take into account the characteristics of the disease, such as incubation period of diseases .

Malaria and dengue fever were the most commonly notified vector-borne diseases in New Zealand: Malaria accounted for 45% while dengue fever accounted for 48% of total notifications from 1997 to 2012 (Table 1). The majority of these cases had a history of overseas travel (Figure 1).

Between 1997 and 2012, around 90% of vector-borne disease notifications had overseas travel as a risk factor. Among them, 96% of the overseas travel happened during incubation period. The remaining cases were those who had no previous overseas travel or travel history unknown (Table 1).

All notifications of Barmah Forest virus infection, Chikungunya fever, Japanese encephalitis and Lyme Disease since 1997 had a history of overseas travel during incubation period (Figure 1). Theses data suggest that exposure of those diseases almost certainly happened outside New Zealand.

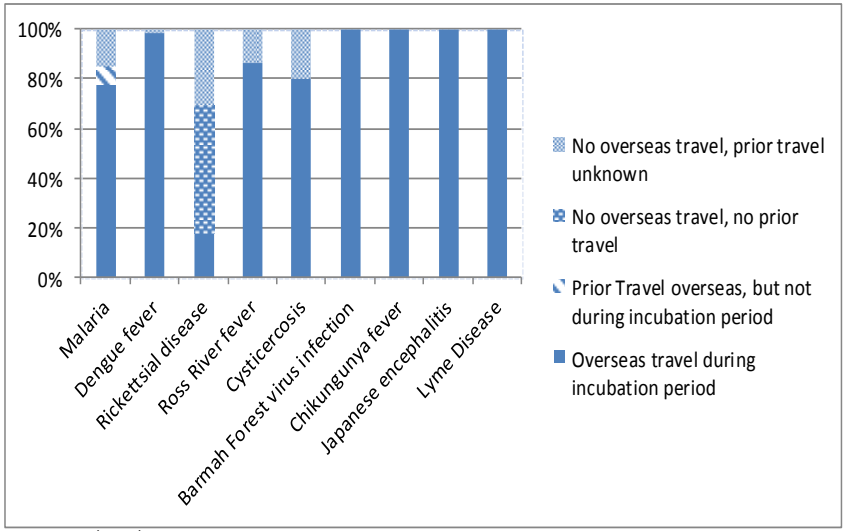
In contrast, the majority of notified rickettsial disease notifications (86%) were found without overseas travel history, which indicated those cases were most likely to be infected within New Zealand (Figure 1). This is consistent with the findings of previous reports in New Zealand by Kelly, Roberts, Fournier (2005), Kelly, Rolain and Raoult (2005), and Roberts, Croxson, Austin et al (2001).

TABLE 1: NUMBER OF NOTIFICATIONS OF VECTOR-BORNE DISEASES IN NEW ZEALAND, BY RISK FACTORS AND YEAR, 1997-2012

Disease	Number of Notifications aggregated 1997-2012					Proportion travelled overseas, either during incubation or prior to illness (%)
	Overseas travel during incubation period	Prior Travel overseas, but not during incubation period	No overseas travel, no prior travel	No overseas travel, prior travel unknown	All notifications 1997-2009	
Malaria	634	66	0	100	800	88
Dengue fever	835	1	0	13	849	98
Rickettsial disease	7	0	37	19	63	11
Ross River fever	28	0	0	3	31	90
Cysticercosis	4	0	0	1	5	80
Barmah Forest virus infection	6	0	0	0	6	100
Chikungunya fever	4	0	0	0	4	100
Japanese encephalitis	1	0	0	0	1	100
Lyme Disease	1	0	0	0	1	100

Source: ESR(2013)

FIGURE 1: PERCENTAGE OF RISK FACTORS OF VECTOR-BORNE DISEASE NOTIFICATIONS IN NEW ZEALAND, BY DISESASES



Source: ESR(2013)

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HIGHLIGHTS:

- Malaria and dengue fever were the most commonly notified vector borne diseases in New Zealand and the majority of these cases had a history of overseas travel.
- Between 1997 and 2012, 90% of notified vector-born diseases had overseas travel as risk factors, among them 96% of the overseas travel happened during incubation period.
- All notifications of Barmah Forest virus infection, Chikungunya fever, Japanese encephalitis and Lyme Disease since 1997 were connected to overseas travel while the majority of rickettsial disease cases were most likely to be infected in New Zealand.

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