

### International Travel and Dengue Fever at The Taoyuan International Airport, Taiwan, 2014–2018

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#### Abstract

Imported dengue infections leading to subsequent local outbreaks continue to be a public health concern in Taiwan. Taiwan Centers for Disease Control has implemented fever screening at international airports for early detection of febrile travelers who may have infectious diseases. We evaluated characteristics in inbound passengers diagnosed with dengue to identify at-risk groups and provide health promotion. Febrile travelers from dengue-endemic countries have been requested for dengue tests at airports since 2003 in Taiwan. A confirmed case was defined as a febrile traveler with a positive result in any of the following tests: dengue non-structural protein 1 (NS1) antigen, RT-PCR, or  $\geq 4$ -fold increase in antibody titers. We enrolled dengue cases reported by quarantine officers at the Taoyuan International Airport during 2014–2018. Data on demographics, travel destinations, reasons for travel, and clinical symptoms were analyzed and compared between citizens and non-citizens. We identified 645 imported dengue cases, including 291 citizens and 354 non-citizens. Among them, 347 (54%) were male and the median age was 32 years (range: 5–73 years). Three hundred (47%) cases were detected during July – October; 611 (95%) had traveled to or from countries in Southeast Asia.

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Independent travel was the most common reason for travel (n = 217, 34%). Among non-citizens, 118 (33%) were migrant workers. Of 626 cases with fever (tympanic temperature  $\geq 38^{\circ}\text{C}$ ), 269 (42%) had self-reported febrile illness. Other symptoms included respiratory symptoms (29%), gastrointestinal symptoms (4%), and rash (3%). Non-citizen cases were more likely to report no symptoms compared to citizen cases (20% vs. 13%,  $p < 0.05$ ). Quarantine officers should consider dengue screening for febrile travelers based on travelers' countries of departure and reasons for travel, regardless of their subjective symptoms. We recommended that preventive strategies, including health education before traveling and health service provision to foreigners, be implemented to reduce the risks of contracting and spreading dengue.

**Keywords:** Fever screening, dengue, airport, border quarantine, imported