

Information topic	Details
Indicator name	Exotic notifiable infectious diseases in New Zealand of priority border health concern
Domain and topic	Border Health
Indicator definition and units	<p>Annual frequency of border health priority diseases* (classified as a Public Health Emergency of International Concern (PHEIC)) and priority notifiable respiratory and vector-borne diseases) imported into New Zealand (by District Health Board (DHB), ethnicity, gender, socioeconomic status (SES), origins of the disease).</p> <p>*Disease priorities should be identified by annual risk assessment (<i>Jefferies 2016 BHI Development report</i>).</p>
Data source	<ul style="list-style-type: none"> - Notifiable and other diseases in New Zealand: Annual Summary. Institute of Environmental Science and Research (ESR) - as required: more detailed data requested from ESR for specific diseases identified in the risk assessment
Numerator	<p>EpiSurv notification counts* reported by ESR for each year, in accordance with their case status annual reporting inclusion criteria (i.e. all cases, excluding those classified 'not a case') (ESR 2015).</p> <p>*Total counts <5 are excluded from analysis to reduce random error and protect case confidentiality.</p>
Denominator	Statistics New Zealand mid-year population estimates for corresponding year and subsection of numerator data.
Methodology	<ul style="list-style-type: none"> - Case counts may be low for exotic diseases. For analysis of the characteristics of vulnerable subgroups, consider pooling annual data by a higher level of disease classification e.g. grouping arboviral diseases versus parasitic mosquito-borne disease. Avoid pooling across years due to the time sensitive nature of border health. However, data aggregation of no greater than 2 years can be considered to enable subgroup analyses, if appropriate. Consider investigating seasonality in diagnosis (if average disease incubation period is <1 month). - Direct age and sex standardisation will be carried out where data allows, otherwise crude rates will be calculated.
Time period and time scale	<ul style="list-style-type: none"> - Annual; from 2001 onwards - Time trends: <ul style="list-style-type: none"> o Trends from 2001 onwards for total counts of individual diseases. o Trends over 2 years for subgroup analyses by overseas origin of disease, age group, gender, ethnicity, SES (New Zealand Deprivation Index) and DHB (Atkinson et al 2014). o Note statistically significant differences (i.e. no

	overlapping 95% confidence intervals, or hypothesis test $p < 0.05$).
Spatial coverage	National
Measures of frequency	Annual number of disease notifications by: <ul style="list-style-type: none"> - origin of disease, - age group, - gender, - ethnicity (prioritised), - SES and - DHB
Limitations of indicator	Annual notification counts may be small making statistical trend analysis unfeasible.
Limitations of data source	<ul style="list-style-type: none"> - Case under-detection is likely for exotic diseases. New Zealand can only identify diseases which are currently notifiable*, which health practitioners know to look for, and for which we have current national diagnostic capacity. - Some diseases, including mosquito-borne diseases, can have a high proportion of asymptomatic or mild associated infection (Duffy et al 2009). <p>*Zika only became officially notifiable in New Zealand in March 2014 (ESR 2015)</p>
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Related indicators	<ul style="list-style-type: none"> - Overseas infectious diseases of priority concern to New Zealand - Human-disease competent vectors/pests introduced to New Zealand - High-risk human-disease competent vectors/pests present at the New Zealand border
For more information	ESR. Annual Surveillance Summary: https://surv.esr.cri.nz/surveillance/annual_surveillance.php (accessed February 2017)
References	<ul style="list-style-type: none"> - Duffy MR, Chen TH, Hancock WT, Powers AM, Kool JL et al. (2009). Zika virus outbreak on Yap Island, Federated States of Micronesia. <i>The New England Journal of Medicine</i> 360: 2536 – 43. - ESR. (2015). <i>Notifiable Diseases in New Zealand: Annual Report 2014</i>. Porirua: Institute of Environmental Science and Research Limited.