

Information topic	Details
Indicator name	<b>Exotic notifiable infectious diseases in New Zealand of priority border health concern</b>
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"> <li>- Notifiable and other diseases in New Zealand: Annual Summary. Institute of Environmental Science and Research (ESR)</li> <li>- as required: more detailed data requested from ESR for specific diseases identified in the risk assessment</li> </ul>
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 &lt;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"> <li>- 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 &lt;1 month).</li> <li>- Direct age and sex standardisation will be carried out where data allows, otherwise crude rates will be calculated.</li> </ul>
Time period and time scale	<ul style="list-style-type: none"> <li>- Annual; from 2011 onwards</li> <li>- Time trends: 2-5 years. <ul style="list-style-type: none"> <li>o Trends over 5 years for total counts of individual diseases.</li> <li>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).</li> <li>o Note statistically significant differences (i.e. no</li> </ul> </li> </ul>

	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"> <li>- origin of disease,</li> <li>- age group,</li> <li>- gender,</li> <li>- ethnicity (prioritised),</li> <li>- SES and</li> <li>- DHB</li> </ul>
Limitations of indicator	Annual notification counts may be small making statistical trend analysis unfeasible.
Limitations of data source	<ul style="list-style-type: none"> <li>- 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.</li> <li>- Some diseases, including mosquito-borne diseases, can have a high proportion of asymptomatic or mild associated infection (Duffy et al 2009).</li> </ul> <p>*Zika only became officially notifiable in New Zealand in March 2014 (ESR 2015)</p>
Created by	Environmental Health Indicators New Zealand, Centre for Public Health Research, Massey University, Wellington
Related indicators	<ul style="list-style-type: none"> <li>- Overseas infectious diseases of priority concern to New Zealand</li> <li>- Human-disease competent vectors/pests introduced to New Zealand</li> <li>- High-risk human-disease competent vectors/pests present at the New Zealand border</li> </ul>
For more information	ESR. Annual Surveillance Summary: <a href="https://surv.esr.cri.nz/surveillance/annual_surveillance.php">https://surv.esr.cri.nz/surveillance/annual_surveillance.php</a> (accessed February 2017)
References	<ul style="list-style-type: none"> <li>- 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.</li> <li>- ESR. (2015). <i>Notifiable Diseases in New Zealand: Annual Report 2014</i>. Porirua: Institute of Environmental Science and Research Limited.</li> </ul>