

# STATISTICAL MODELLING OF CHILDHOOD DIARRHEA IN NORTHEASTERN THAILAND

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**Abstract.** Diarrhea remains an important cause of morbidity in Thailand, particularly for children below age five. This study identified the patterns of diarrhea incidence in children below age five in northeastern provinces of Thailand along the border with Lao PDR, based on the individual hospital case records of patients with diarrhea routinely reported from 1999 to 2004. Linear regression models containing the district, season and year as factors were fitted to the log-transformed disease incidences, with generalized estimating equations used to account for spatial correlation between districts. Low disease counts suggesting under-reporting were handled by imputation based on these models. This study found a seasonal pattern higher in January to March and April to June. Higher rates occurred in most districts of Loei and Amnat Chroen Provinces. Using a thematic map to display the level of diarrhea incidence by district can provide useful information for health authorities to direct their intervention plans more effectively and to set up health policies for prevention of disease.

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