

**Socio-environmental factors and diarrheal diseases in under five-year old children in the state of Tocantins, Brazil****Volmar MF**

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Diarrhoea is a waterborne disease that affects children, especially those under 5 years of age. The objective of this study was to identify the spatial patterns of distribution of diarrheal disease in under 5-year-old children in the State of Tocantins, Brazil, from 2008 to 2013. Geoprocessing tools were used to carry out an epidemiological study, to prepare thematic maps in the TerraView 4.2.2 software based on secondary data. General indicators of the disease, presence of spatial dependence through the Global Moran's Index (I) and the Spatial Association Index (LISA) were described. There were 3,015 cases of under 5-year-old children hospitalized for diarrhoea, with an average annual rate (AAR) of 4.10/1,000 inhabitants (inhab.). Among the main characteristics were: increasing rates in under 1-year-old children (6.16 to 9.66/1,000 inhabitants);

children aged 1 to 4 full years (63%); males (55%); 8 deaths of under one-year-old children (75%); county of Araguaína (67%); incidence in the county of Nazaré (63.97/1,000 inhab.); prevalence and incidence in the Araguaína microregion (45%, AAR 9.38/1,000 inhab.). The presence of a cluster with spatial autocorrelation was found in the Araguaína microregion, which was statistically significant ( $I = 0.11$ ,  $p\text{-value} < 0.03$ ), with priority of intervention (Moran Map). There was an increase in the number of hospitalizations for diarrhoea in under 5-year-old children in the state of Tocantins. The spatial analysis identified clusters of priority areas for measures of maintenance and control of diarrheal diseases.

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