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Title: Spatio-Temporal modeling and prediction of Tuberculosis incidence rate in Khorasan Razavi province (Kashmar, Khalilabad and Bardeskan cities)

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Abstract: The past two decades have witnessed an increasing interest in the use of space-time models for a wide range of environmental and epidemiological problems. The spatio-temporal epidemiology is one of the most important tools for epidemiologists to detect, monitor and predict public health disease patterns. Nowadays, tuberculosis (TB) infectious diseases caused by the Mycobacterium are very concerned with it and its association to several other diseases and factors. Each year, tuberculosis kills about three million people in the world. The purpose of this study is to determine if there are spatiotemporal tuberculosis incidence model in Kashmar, Khalilabad and Bardeskan which are cities of Khorasan Razavi province (Iran). The presented case study is based on the notification of new tuberculosis cases (disease incidence), between 2006 and 2012. In methodological terms, the spatio-temporal kriging (best spatio-temporal linear prediction) statistic, used to identify spatio-temporal modeling and prediction of TB incidence for two next years (2013-2014). For this case study, the number of new notified cases of TB, per sub-district and per year (2006–2012) was available. In terms of spatiotemporal modeling of tuberculosis disease, the proposed methodology allowed the identification of critical areas with critical incidence rate. Results indicate that in these critical regions must perform prophylactic actions to decrease TB incidence rate on next years.

Spatio-Temporal, modeling, Tuberculosis

Presentation: Poster