

ESTIMABILITY OF MEASURES OF ASSOCIATION AND EFFECTS IN SPATIAL CASE-CONTROL STUDIES

Ricardo Carlos CORDEIRO

School of Medical Sciences / State University of Campinas (Unicamp)

This project's theme is to investigate a method: the spatial case-control study, understood as a case-control study which explicitly incorporates spatial location as a covariate of interest. This, given the non linearity of spatial distribution for most occurrences of epidemiological interest, implies a sweeping change to the ordinary analytical instrument used in case-control studies. The objectives of this project are in case-control studies: a) To verify the behavior and epidemiological significance of the spatial relative risk function in function of "case-base sampling", "risk-set sampling" sample designs and sampling from "survivors" of the studied disease. b) To develop a computer model which gives a set of predefined demographic, geographic, and epidemiological parameters, simulating the execution of spatial case-control studies in different epidemic configurations, more as an approach for a study of behavior and precision of spatial relative risk function estimator in function of the above cited sample designs. c) To apply a multinomial logistic regression model to estimate spatial distribution of occurrence risk when occurrences are classified according to their "severity"; this is in contraposition to the binary model which classifies studied individuals as either cases or controls, developing a multinomial treatment, which enables estimation of the spatial distribution of occurrence risk for cases in function of their severity. d) To develop significance tests for parameters of the non-linear component from surface estimates of risk in spatial case-control studies, which can be used in parallel or in place of the currently used Monte-Carlo procedure. e) To test the methodological results obtained, particularly the one in item c) above, in the reanalysis of two case-control studies: "Spatial distribution of work accident risk in the informal Piracicaba work market and "Spatial distribution of dengue fever risk in the south region of Campinas Municipal Area, both of which supported by FAPESP.

As the project has commenced, data obtained will lead to publications on due course.

Ricardo Carlos CORDEIRO

Faculdade de Ciências Médicas
Universidade Estadual de Campinas
Departamento de Medicina Preventiva e Social.
Caixa Postal 6111 - Barão Geraldo
CEP 13083-970 - Campinas, SP - Brasil

+55-19-3788-8036
ricacordeiro@gmail.com