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Spatial clustering of HIV/AIDS mortality events in rural South Africa population between 2000-2006

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DECLARATION

I, Elias Namosha declare that this report is my work. It is being re-submitted for the degree of Master of Science in Medicine (Population-Based Field Epidemiology) at the University of the Witwatersrand, Johannesburg, South Africa. The award of the degree is subject to minor corrections to be made to the satisfaction of the Head of Department.



The 24th day of August, 2009

In memory of my late mother

Esiong Namosha (1982),

You will always be remembered.

I also would like dedicate this work to my father, Namosha W. Gigia,

late Yamoa Gigia (uncle), late Dawanan Zumputs (brother) and late Tomda Batayapun

(brother in law) and all immediate family members.

ABSTRACT

***Background*:** Cluster detection analysis could be an appropriate approach to identify critical AIDS mortality locations for public health intervention.

Methods: GIS and Kulldorff's spatial scan statistic was used to investigate statistically significant AIDS mortality clusters ($p \leq 0.05$). SaTScan was used to perform the spatial analysis scanning while MapInfo was used as a visualizing tool. Mortality data between 2000-2006 were analyzed.

Results: AIDS exhibit strong spatial clustering tendencies as measured by the Kulldorff's spatial scan statistic method.

Conclusion: Further work is needed to understand the underlying mechanisms responsible for the spatial clustering.

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