MEASURING URBAN HEALTH DIFFERENTIALS: CONCEPTUAL AND ANALYTICAL CHALLENGES ILLUSTRATED FROM A STUDY OF ACCRA, GHANA

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LONG ABSTRACT

Assessments of population health draw on data from diverse sources. Increasingly, major national and international household surveys (the World Health Survey and the DHS, for example) are geo-coding their data, making it possible to link data for points (households) or small areas (census tracts or equivalent) with environmental and other information sometimes obtained by remote sensing. Now, most demographic and health data can be located in space, even in low-income countries. We have already shown from the analysis of fertility data from Egypt how an understanding of the interaction of individual and community-level factors at different levels, including a consideration of the contiguity of geographical areas, can provide new insights into the fertility transitions.[1] [2]

In this new study of the health of women in Accra, we have faced fresh challenges in measuring urban health differentials. At the outset, the structure of the survey instruments required some re-thinking of the dimensions or domains of health that can be reliably assessed from self-report studies. An attempt to standardize fore social class variations in health status reporting was tested using "anchoring vignettes". The study, in addition to the home interviews also included and so-called objective evaluations of the health of 3200 women aged 18 and over by physicians. During the individual medical examinations, attempts were made to verify the self-report data with physical examinations and laboratory tests by overlapping topics covered in both encounters. These very different types of health information presented new challenges in the assessment of health status and drew attention to the question of the reliability, consistency and significance of the different forms of health assessment.

In a subsequent phase, linking the 2000 census data to possible risk factors for some commonly observed conditions, we faced the problem of connecting outcome variables measured at the individual level to risk factors and other confounders observed for areal units. This analysis revealed the need for a clear specification of the models needed to

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[1] Rashed, T, JR Weeks, MS Gadalla and Allan G. Hill. 2001. Revealing the anatomy of cities through spectral mixture analysis if multi-spectral satellite imagery: a case study of the Greater Cairo region, Egypt. *Geocarto International* 16(4): 5-13.

[2] Weeks, J, M Saad Gadalla, T Rashed, J Stanforth and Allan G. Hill. 2000. Spatial variability in fertility in Menoufia, Egypt assessed through the application of remote sensing and GIS technologies. *Environment and Planning* A: 4

explain both differentials and changes in population health. Some of the older "proximate determinants" models of mortality and morbidity change proved unsatisfactory and so newer specifications of the causes of the burden of disease have been developed.

The project links new data from the 1998 DHS survey, the 2003 DHS, the WHO World Health Survey (WHS - fieldwork February – September 2003) and the Accra Women's Health Survey (AWHS - fieldwork March –September 2003), each of which contains geocodes for the sample clusters (DHS) or for the individual households interviewed (WHS and AWHS). Objectively assessed and subjectively reported measures of adult health will thus be available for a representative sample of 3200 women aged 18 and over from the AWHS. Only self-assessed health status is available in the WHS but this covers adult men and women. These data will then be linked and a spatial statistical analysis conducted to assess measures of association between environment, living standards and health.

In a second phase, the project will examine in detail these connections at a local level in a poor neighbourhood, Nima-Maamobi, where the Legal Resources Centre has been active in health promotion at the community level for over 5 years. The LRC, staffed by lawyers from the Faculty of Law, other lawyers and environmental scientists, has formed solid working relations with women's groups, the gender action committees and local political, religious and traditional leaders to promote health through improved water and sanitation and the payment of exemptions from user fees for health services. Working with the local community, the project will produce a subjective assessment of environmental risks and compare this with assessments based on the statistical evidence. The result will be a plan of action developed by the AMA Health Department in conjunction with the community leaders for scaling up of the project to cover other poor neighbourhoods of the city. For this reason, the Medical Officer for Public Health for the AMA is part of this project from the outset. Other support is being sought for objective assessment of water and air quality at a later stage. The baseline analysis in Phase 1 will also form the starting point for the assessment of planned interventions.

The paper illustrates the often-divergent nature of mortality and morbidity profiles in a population, depending not only on the measurement tool but also on the level of disaggregation. [3] An awareness of these complex effects is a necessary step to more comprehensive examinations of health in urban areas, particularly with a view to the identification of spatial differentials in multi-cultural societies.

[3] .Agyei-Mensah and A. Aase (1998). Patterns of Fertility Change in Ghana: A Time and Space Perspective.Geografiska Annaler, 80B pp 203-213