ABSTRACT. For planners, providers and evaluators of vital services in urban areas of developing nations, the availability of sufficient environmental data is oftentimes a major stumbling block. The authors here present a low-cost, rapid survey technique for gathering information on the urban ecology. The effort is developed from and validated in a research program correlating urban neighborhood (barrio) characteristics with infant and child mortality in Cali, Colombia. The technique establishes a minimal set of indicators exhibiting variance with respect to other social indices by utilizing the combined results of a random sample questionnaire and a secondary data set gathered from various public sources. The subset of efficient indicators of quality of life is derived from the total data set by utilizing a system of ridit weights.

A RAPID SURVEY TECHNIQUE FOR URBAN ECOLOGICAL STUDIES IN DEVELOPING NATIONS

The increasing importance of urban dwellers in the growth of the developing world and the lack of the city’s ability to absorb and manage large numbers of inhabitants is a well documented phenomena. Latin America’s urban population alone increases by around seven million persons a year (Fox, R.W., 1975) and some scholars make a convincing argument for a 500 million population in Latin American megalopolis by the year 2000 (Terra, J.P., 1976). While the precise nature of this continuing process of hyper-urbanization is documented elsewhere (Turner, 1976) few have concerned themselves with potential health and human service problems implicit in increasingly large populations. Urban and regional governments with inadequate preventive and curative health programs will ultimately be responsible for the consequences of these problems. The intent of the effort reported here has been to develop a methodological tool for understanding the relationship of multiple environmental and social factors to the urban ecology of a single Latin American city. It is based upon what we think is a growing need for rapid detection of high risk areas for a relatively low cost.

The development of inexpensive data gathering techniques appropriate to areas of the developing world where regularly collected information is not...
available has often been superseded by costly and many times unprocessed census and survey material. For rapid diagnosis of problem areas, the evaluation of new health and social service programs, or the monitoring of new marginal settlements, systematically collected and thoroughly analyzed information is useful to planners and decision makers. Yet, as any urban scholar knows, the problem of excess or inappropriate data is a significant one. It was the question of what data to collect and how to synthesize it rapidly for health planners that initiated this particular research. Our objective was to establish a minimal set of indicators that exhibited variance with respect to other social indices, particularly health, for urban populations in Latin America. These indicators should be easy and inexpensive to collect, not depend extensively on other secondary data sources, and be within the realm of even the most modest city planning or public health office.

Based upon a project started in 1969 by the World Health Organization,1 the investigators developed a set of key questions from a combination of field experience and relevant sociological literature which could be expected to differentiate ‘barrios’ or residential neighborhoods in Cali, Colombia. These indicators were ordered as a questionnaire and responses gathered by a field survey staff for each of the over two hundred neighborhoods of this city.

I. THE RESEARCH SITE

Cali, Colombia is a rapidly growing hinterland city of approximately one million inhabitants (1973) located in the fertile Cauca Valley in southwestern Colombia. While its principal commerce has developed around processing the agricultural by-products of the surrounding area, recently developed manufacturing capabilities have provided both the trappings and employment patterns of larger and older industrial-based cities. Immigration to the city has been in the pattern of most Latin American megalopoli with over 70% of current resident heads of households originally born elsewhere (Bertrand, et al., 1974). A crude birth rate of between 35 and 45 over the last ten years and slowly decreasing mortality patterns have combined to provide a continued natural increase rate of between 3.2% and 2.8% during that same period.

With respect to its ecological pattern, the city fits the general pattern of concentric zones with the old central city area providing the nexis. As in many third world areas, new barrios generally composed of lower class