Trends in rural-urban differentials in mortality in small area in Ghana.

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Introduction

Even though mortality levels are on the decline globally, the level remains high in the developing world. For instance, it is estimated that, globally about 11 million children die before celebrating their fifth birthday, and sub-Saharan Africa accounts for one third of these deaths (Hill et al, 1999; UN, 2013). Most of these deaths are preventable but requires the knowledge of the most vulnerable groups of the population.

Another worrying phenomenon is the fact that the magnitude of the problem is further obscured by the national average as there are high differential between and among population sub-groups, especially rural/ urban dichotomy. Specific interventions are sometimes required to deal with problems associated with these vulnerable populations. For instance certain cultural practices which are mostly associated with rural populations are detrimental to survival. These practices need to be identified so that specific policy interventions can be put in place to improve survival.

To achieve these goals requires the availability of the required data. However, there is paucity of accurate, reliable and timely data on mortality in most African countries (Mahapatra et al. 2007; Mathers et al. 2005; Soto et al, 2013). In addition, the traditional sources of data have their respective challenges and are subject to various errors (Cleland, 1996). An important system of demographic data collection in developing countries that is now gaining popularity is Health and Demographic Surveillance Systems (HDSS). The objective of this analysis is to use longitudinal data from the Navrongo Health and Demographic Surveillance System (NHDSS) in Ghana to examine trends in mortality differentials between the rural and urban settings of the Surveillance area.

Data and methods

Data from the NHDSS for the period 1996 to 2012 will be used for this analysis. The NHDSS started data update in July 1993 after baseline data collection and cleaning in 1992. Since then the HDSS has been engaged in the monitoring of health and demographic dynamics of the study area. Fieldworkers visit each household three every four months (used to be every three months until 2006) to collect and update information on health and demographic events that includes pregnancies, births, immunization status of children, deaths and migration in and out (Oduro et al, 2012). In addition, verbal autopsies are conducted on all deaths to ascertain the causes of death of the study population.

Members of the HDSS include all individuals who were registered at baseline censuses as well as in-migrants who have continuously stayed in the demographic surveillance area (DSA) for at least three months (90 days). All individuals who are born to mothers who are registered members of the HDSS are included in the study.

Results

We first looked at the Crude Death Rate between rural and urban populations. It is noticed that between 1996 and 2004 the rural population has consistently experienced significantly higher death rates than the urban area. Even though the difference prevailed between 2005 and 2007, it was not significant. There was yet significant difference in 2008, 2009 and 2011 in favor of the rural population. However, in 2012 there was a slight difference in the rate in favor of the urban population, though the rate was not significant.

CDR, 1996-2012
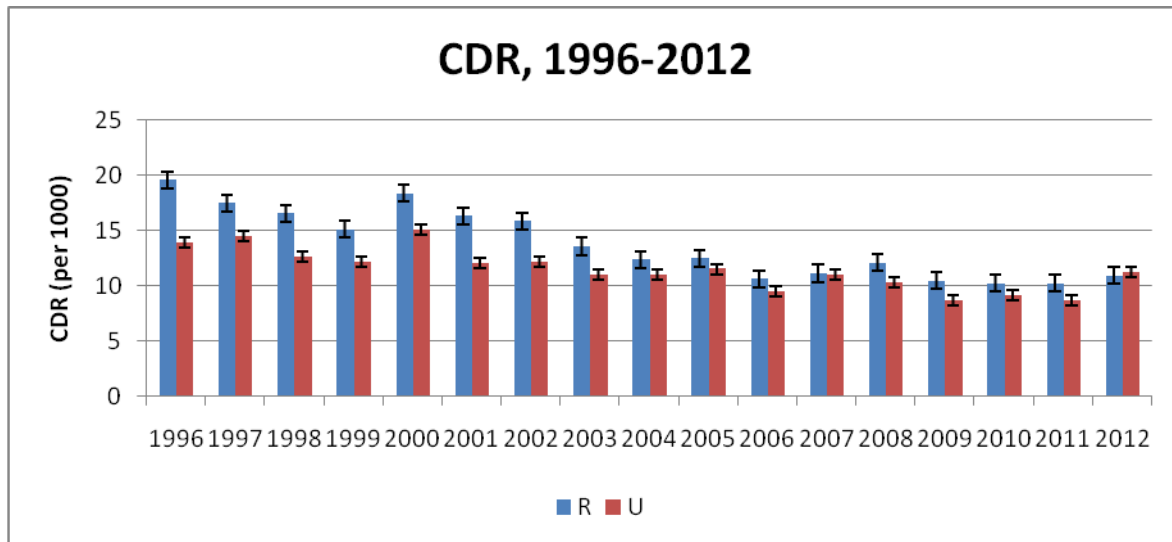
We next looked at the infant mortality rate between the rural and urban populations. From the graph below, it is noticed that there has been consistent and significantly higher infant mortality experienced by the rural population from 1996 to 2005. Even though differences existed thereafter, it was not significant. However, in 2012 the unexpected happened as there was a significance difference in the rate in favor of the rural population. Similar pattern and trend was observed for the under five mortality (5q0), except that in 2012 the difference in favor of the urban population was not significant.

1q0,1996-2012
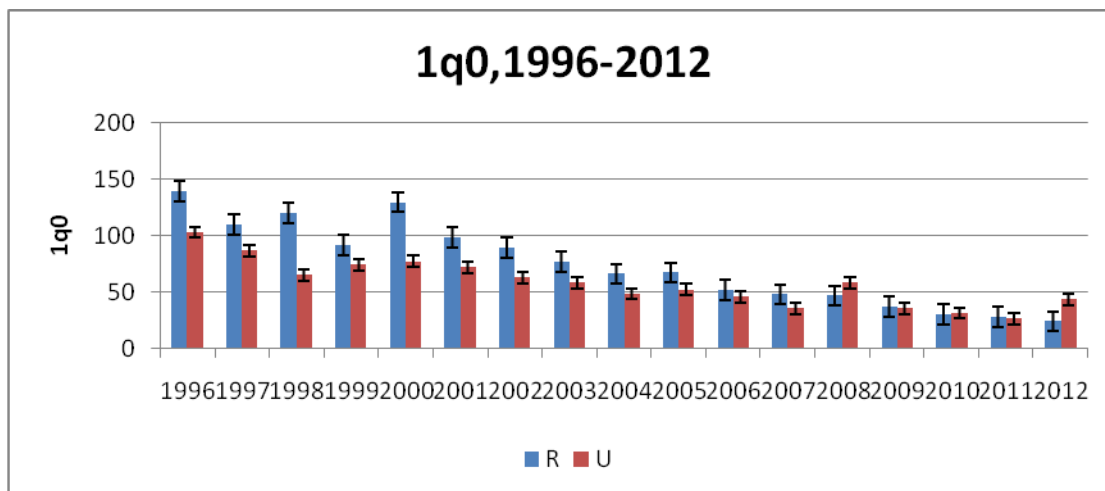
Discussion and conclusion

The analysis has shown the existence of differences in the various mortality rates between rural and urban populations of the study areas. However, the significant differences gradually disappeared over time. The disappearance of these differentials was due to some child health interventions that were implemented in the communities, particularly rural areas. This was made possible due to available of accurate and timely data to inform policy makers on where mortality is highest and the appropriate or specific interventions are mostly needed.

In conclusion, this analysis has demonstrated the existence of mortality differentials between rural and urban populations of the surveillance area. It has demonstrated the importance of data to show these differences for the appropriate policy interventions to bridge the gap between rural and urban populations, where mortality is highest.