INDEPTH Briefing 2: What is a demographic surveillance system?

In the last 30 years, many developing countries have responded to the absence of effective health and population data by establishing demographic surveillance systems (DSS). A World Bank official has hailed the growth of DSS sites as marking “the first step toward rational health planning and meaningful health programs for the people of [developing] countries.”

The DSS established in Matlab, Bangladesh, in 1963 is the best-known and largest system. By providing robust, reliable information on the health problems facing poor communities, Matlab has made major contributions to health development in Bangladesh and elsewhere in the developing world. The 35 other sites that make up the INDEPTH network, such as Navrongo in Ghana and Ifakara in Tanzania, are beginning to have similar impacts on health policy.

The defining characteristics of an INDEPTH field site are the following:

- A geographically defined population under continuous demographic monitoring, with timely production of data on all births, deaths, and migrations.

- This monitoring system should provide a platform for assessing a wide range of health-system, social and economic interventions, all closely associated with research activities.

Demographic surveillance systems work by monitoring individuals, households and residential units in a well-defined geographic area, known as a demographic surveillance area. They begin with an initial census, which defines and registers each individual in the target population. As well as age, sex and marital status, data are collected at this stage on household composition, religion, ethnicity, education levels, occupation, household wealth and access to facilities such as water and sanitation.

Regular subsequent rounds of data collection monitor changes to this population by gathering information on births, deaths and migrations. These update rounds also record other key events such as marriage, divorce, pregnancy and changes in

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1 Demissie Habte, Foreword to Population and Health in Developing Countries Volume 1: Population, Health and Survival at INDEPTH Sites, IDRC, Ottawa 2002.
employment status. The frequency of visits to households varies between sites, ranging from once per week to once per year, although most sites visit every three to four months. Data are collected through face-to-face interviews using questionnaires.

DSS sites also collect data on health, cause of death and socio-economic status. Depending on a site’s areas of research interest, other events recorded include household formation or dissolution, use of health care facilities, and acquisition and loss of economic assets.

The aim of a DSS is to improve the lives of people living in developing countries by informing and influencing policy. Their key advantage over traditional cross-sectional studies is their ability to measure trends over time and therefore to provide a clearer picture of demographic and health developments. By establishing a reliable information base, DSS sites can help policy-makers set health priorities and allocate resources more efficiently. As a platform for the testing of health interventions, they can provide feedback on programs’ effectiveness and inform future policy development. And with regard to research, they can help define a relevant research and development agenda at the same time as increasing national research capacity.

More detailed information on DSS concepts and methods is provided in the INDEPTH monograph series, ‘Population and Health in Developing Countries’.