Largest ever dataset on individual deaths in Africa & SE Asia reveals changing health of developing world

An unprecedented insight into the changing health of people across Africa and Asia - including the fluctuating burdens of HIV, malaria and childhood mortality - is revealed today by the publication of the largest ever dataset of individual deaths recorded on-the-ground.

More than 110,000 individual deaths and their causes across 13 countries, including Ghana, South Africa, Kenya, Bangladesh and Vietnam, are contained in the new INDEPTH dataset. The data, collected by hundreds of researchers over two decades, are the first meaningful community-based information about cause of death in countries where individual deaths are not recorded automatically by national governments.

Fig. 1: Age-sex-time-standardised mortality rates per 1,000 person-years by cause of death and site

The INDEPTH cause of death findings are published in a special issue of the journal Global Health Action, which is fully open access. There are six multisite papers dealing with specific causes of death: HIV/AIDS, malaria,
pregnancy-related, external causes (including accidental death and suicide), adult non-communicable diseases and childhood illness. Other papers describe methods, and many sites have contributed papers with local details. The project has been substantially funded by the Hewlett Foundation, Sida/Research Cooperation Unit and the Wellcome Trust.

![Image of mortality rates](http://indepth-network.org/indpeth_press_release.html)

**Fig. 2: Age-sex-time-standardised mortality rates per 1,000 person-years among adults, 15 years and over by NCD**

The data were collected in 22 sites, each containing around 100,000 people. Each death was recorded by a researcher in the field who conducted a standardised verbal autopsy, a structured interview with a family member of the deceased. Data were computer-processed to establish likely causes of death.

The entire dataset (also now available in the public domain), which at some sites includes cause of death data collected as far back as 1992, represents more than a century of working time. It also proves that data relating to cause of death can be reliably collected by non-medical staff outside of a clinical setting.

Overall, the data provide a strong case for the value of recording cause of death for planning and improving public health services. They show high variability in cause of death across sites, particularly in deaths caused by endemic diseases such as malaria and HIV. Although the picture is complex, there is some evidence to link mortality with differing investment in healthcare over the two decades of the study. For example an INDEPTH site in rural northeast South Africa has documented the peak of HIV/AIDS-related deaths and is now seeing a substantial decline in HIV/AIDS mortality as public health programmes start to take effect.

The INDEPTH collaboration is able to estimate the global burden of major diseases. For example, they calculate that that under-5 child mortality ranged from 15 per 1,000 in the Vietnamese site to 152 per 1,000 in one Kenyan site. Malaria mortality ranged from zero at one Bangladeshi site to more than 2 per 1,000 in parts of Africa. HIV/AIDS mortality was more than 300 times higher in some African sites compared with Asian levels.

Unlike other mortality estimates, such as the ones made by United Nations agencies and the Global Burden of Disease project in Seattle that are based on mathematical models, the INDEPTH estimates are based on
information about real deaths in defined areas of the population. Encouragingly for researchers, the findings of INDEPTH are very similar to the outputs from the mathematical modelling techniques, indicating that they confirm each other.

There are other important specific findings from the dataset. Across the countries, the data show consistently high rates of maternal and childhood mortality. Childhood drowning in Bangladesh and homicide among adult males in eastern and southern Africa are other causes for concern. Mortality from non-communicable diseases, particularly in younger adulthood, is an emerging problem, accounting for a high proportion of deaths in Asian countries.

Osman Sankoh, Executive Director of INDEPTH said: “It pleases me to note that our own scientists have conducted the research, generated, cleaned and analysed the data, and have written the papers in this Journal. Together with these publications we are making the datasets freely and widely accessible to the public on the INDEPTH Data Repository. This INDEPTH approach confirms that if scientists from low- and middle-income countries are funded to be able to analyse their data and publish their work, they will unquestionably make their data publicly available.”

Marcel Tanner, Chair of the INDEPTH Board of Trustees, Director of the Swiss Tropical and Public Health Institute in Basel, Switzerland, said: "A fundamental achievement of INDEPTH that should encourage an international discourse on cause-specific mortality in these resource-poor settings."

PeterByass, Director of the Umeå Centre for Global Health Research in Sweden, and a long term member of the INDEPTH collaboration, said: “Good cause-of-death data are absolutely essential to well-functioning public health systems. Thinly-stretched health careproviders are not necessarily best-placed to consistently deliver reliable cause-of-death data, and many deaths do not occur in health facilities."

He added: “We have shown here that standardised verbal autopsies – now typically reduced to a 15-minute interview with a family member and carried out by non-clinical staff – can provide valuable data at modest cost and effort.”

Ties Boerma, Director of Health Statistics and Information Systems at the World Health Organization, who has written an accompanying editorial for the special issue of Global Health Action, said that INDEPTH “presents the largest dataset of this nature ever,” adding that this work “needs to be considered in the context of the need to strengthen country Civil Registration and Vital Statistics systems, and should be a central element in the post-2015 development agenda.”

Abbas Bhuiya, Deputy Executive Director of theInternational Centre for Diarhoeal Disease Research, Bangladesh, a founding member centre of INDEPTH, said: "INDEPTH provides us the forum to present research results from several continents; this publication will make Asian and African policy makers see cause-specific mortality situations in other continents."

Fred Binka, the first Executive Director of INDEPTH, now Vice Chancellor of the University of Health and Allied Sciences in Ho, Ghana, said: "Publishing these crucial data and results is a huge achievement of INDEPTH. I am delighted that the Network is taking a lead role in the big data revolution from the Global South."
Reference

Global Health Action: The permanent URL for the special issue will be:
http://www.globalhealthaction.net/index.php/gha/issue/view/1602#INDEPTH%20Network%20Cause-Specific%20Mortality (from 29 October)

The INDEPTH Data Repository: http://www.indepth-share.org/index.php/catalog/48

Press Releases on the launch

Wellcome Trust: http://www.wellcome.ac.uk/News/Media-office/Press-releases/2014/WTP057781.htm
University of the Witwatersrand, Johannesburg, South Africa:
http://www.wits.ac.za/newsroom/newsitems/201410/25071/news_item_25071.html

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About INDEPTH
The INDEPTH Network is one of the few international population health agencies based in the global South. From its Secretariat in Accra, Ghana, it serves as an umbrella organisation for 52 Health and Demographic Surveillance System (HDSS) sites in 20 low- and middle-income countries, each following individuals in defined populations on a continuous basis. www.indepth-network.org