Africa, Asia, Oceania, Global - INDEPTH Network Cause-Specific Mortality - Release 2014, 1992-2012

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Overview

Identification

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Version

VERSION DESCRIPTION
Version 1

PRODUCTION DATE
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Overview

ABSTRACT
Cause of death data based on VA interviews were contributed by fourteen INDEPTH HDSS sites in sub-Saharan Africa and eight sites in Asia. The principles of the Network and its constituent population surveillance sites have been described elsewhere [1]. Each HDSS site is committed to long-term longitudinal surveillance of circumscribed populations, typically each covering around 50,000 to 100,000 people. Households are registered and visited regularly by lay field-workers, with a frequency varying from once per year to several times per year. All vital events are registered at each such visit, and any deaths recorded are followed up with verbal autopsy interviews, usually 147 undertaken by specially trained lay interviewers. A few sites were already operational in the 1990s, but in this dataset 95% of the person-time observed related to the period from 2000 onwards, with 58% from 2007 onwards. Two sites, in Nairobi and Ouagadougou, followed urban populations, while the remainder covered areas that were generally more rural in character, although some included local urban centres. Sites covered entire populations, although the Karonga, Malawi, site only contributed VAs for deaths of people aged 12 years and older. Because the sites were not located or designed in a systematic way to be representative of national or regional populations, it is not meaningful to aggregate results over sites.

All cause of death assignments in this dataset were made using the InterVA-4 model version 4.02 [2]. InterVA-4 uses probabilistic modelling to arrive at likely cause(s) of death for each VA case, the workings of the model being based on a combination of expert medical opinion and relevant available data. InterVA-4 is the only model currently available that processes VA data according to the WHO 2012 standard and categorises causes of death according to ICD-10. Since the VA data reported here were collected before the WHO 2012 standard was formulated, they were all retrospectively transformed into the WHO 2012 and InterVA-4 input format for processing.

The InterVA-4 model was applied to the data from each site, yielding, for each case, up to three possible causes of death or an indeterminate result. Each cause for a case is a single record in the dataset. In a minority of cases, for example where symptoms were vague, contradictory or mutually inconsistent, it was impossible for InterVA-4 to determine a cause of death, and these deaths were attributed as entirely indeterminate. For the remaining cases, one to three likely causes and their likelihoods were assigned by InterVA-4, and if the sum of their likelihoods was less than one, the residual component was then assigned as being indeterminate. This was an important process for capturing uncertainty in cause of death outcome(s) from the model at the individual level, thus avoiding over-interpretation of specific causes. As a consequence there were three sources of unattributed cause of death: deaths registered for which VAs were not successfully completed; VAs completed but where the cause was entirely indeterminate; and residual components of deaths attributed as indeterminate.

In this dataset each case has between one and four records, each with its own cause and likelihood. Cases for which VAs were not successfully completed has a single record with the cause of death recorded as “VA not completed” and a likelihood of one. Thus the overall sum of the likelihoods equated to the total number of deaths. Each record also contains a population weighting factor reflecting the ratio of the population fraction for its site, age group, sex and year to the corresponding age group and sex fraction in the standard population (see section on weighting).

In this context, all of these data are secondary datasets derived from primary data collected separately by each participating site. In all cases the primary data collection was covered by site-level ethical approvals relating to on-going demographic surveillance in those specific locations. No individual identity or household location data are included in this secondary data.

1. Sankoh O, Byass P. The INDEPTH Network: filling vital gaps in global epidemiology. International Journal of Epidemiology 2012; 41:579-588.

2. Byass P, Chandramohan D, Clark SJ, D'Ambruoso L, Fottrell E, Graham WJ, et al. Strengthening standardised interpretation of verbal autopsy data: the new InterVA-4 tool. Global Health Action 2012; 5:19281.

KIND OF DATA
Verbal autopsy-based cause of death data

UNITS OF ANALYSIS
Death Cause

Scope

NOTES
Cause of death derived from verbal autopsy interviews using automated anlysis by a computer program, InterVA 4.

TOPICS

Topic	Vocabulary	URI
Cause of Death [N01.224.935.698.100]	MeSH	http://www.ncbi.nlm.nih.gov/mesh
Mortality [N01.224.935.698]	MeSH	http://www.ncbi.nlm.nih.gov/mesh

Coverage

GEOGRAPHIC COVERAGE
Demographic surveiallance areas of the following HDSSs:

Code Country INDEPTH Centre

BD011 Bangladesh ICDDR-B : Matlab

BD012 Bangladesh ICDDR-B : Bandarban

BD013 Bangladesh ICDDR-B : Chakaria

BD014 Bangladesh ICDDR-B : AMK

BF031 Burkina Faso Nouna

BF041 Burkina Faso Ouagadougou

CI011 Cte d'Ivoire Taabo

ET031 Ethiopia Kilite Awlaelo

GH011 Ghana Navrongo

GH031 Ghana Dodowa

GM011 The Gambia Farafenni

ID011 Indonesia Purworejo

IN011 India Ballabgarh

IN021 India Vadu

KE011 Kenya Kilifi

KE021 Kenya Kisumu

KE031 Kenya Nairobi

MW011 Malawi Karonga

SN011 Senegal IRD : Bandafassi

VN012 Vietnam Hanoi Medical University : Filabavi

ZA011 South Africa Agincourt

ZA031 South Africa Africa Centre

UNIVERSE (1)
Surveillance population

UNIVERSE (2)
Deceased individuals

UNIVERSE (3)
Cause of death

Producers and Sponsors

PRIMARY INVESTIGATOR(S)

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OTHER PRODUCER(S)

Name	Affiliation	Role

FUNDING

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Bill & Melinda Gates Foundation		
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SIDA / Research Cooperation		
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Wellcome Trust		
WHO/HMN		
William and Flora Hewlett Foundation		

OTHER ACKNOWLEDGEMENTS

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Metadata Production

METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
Kobus Herbst	KHe	INDEPTH Network	Study documentation
Peter Byass	PBy	INDEPTH Network	Study documentation
Centre for Global Health Research	CGHR	University of Toronto, Canada; St. Michael's Hospital, Canada	Metadata Production

DATE OF METADATA PRODUCTION
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DDI DOCUMENT VERSION
Version 4.0. This is the fourth version of this DDI document. The third can be found here:
http://www.indepth-ishare.org/index.php/catalog/48/related_materials

DDI DOCUMENT ID
glob-cghr-indepth-1992-2012-v04

Sampling

Sampling Procedure

No sampling, covers total population in demographic surveillance area

Weighting

The number of deaths by sex and age group were weighted using the INDEPTH 2013 standard population structure for low- and middle-income countries (LMICs) in Africa and Asia [1], as shown in Table 1. This public-domain standard population has been presented in relation to other global standards such as Segi and WHO, from which it differs in reflecting the higher fertility and younger-age mortality rates commonly seen in LMIC populations [1].

Each record contains a population weighting factor (wt) reflecting the ratio of the population fraction for its site, age group, sex and year to the corresponding age group and sex fraction in the standard population described in Table 1, for the purposes of standardisation. A further factor (lik_wt) is calculated for each record as the product of the VA cause likelihood and the population standard weighting (both described above), which can be used as the basis for calculating age-sex-time standardised CSMFs and CSMRs.

Table 1:

Age Group | INDEPTH 2013 standard
 | Male | Female
0-28 days | 0.11% | 0.10%
1-11 months | 1.49% | 1.38%
1-4 years | 6.01% | 5.57%
5-14 years | 13.76% | 12.57%
15-49 years | 22.54% | 23.50%
50-64 years | 3.87% | 4.36%
65+ years | 2.22% | 2.52%

1. Sankoh O, Sharrow D, Herbst K, Kabudula CW, Alam N, Kant S, et al. The INDEPTH standard population for low- and middle-income countries, 2013. Global Health Action 2014; 7:23286.

Questionnaires

Overview

The Verbal Autopsy Questionnaires used by the various sites differed, but in most cases they were a derivation from the original WHO Verbal Autopsy questionnaire.

http://www.who.int/healthinfo/statistics/verbalautopsystandards/en/index1.html

Data Collection

Data Collection Dates

Start	End	Cycle
1992-01-01	2012-12-31	N/A

Time Periods

Start	End	Cycle
1992-01-01	2012-12-31	N/A

Data Collection Mode

Face-to-face [f2f]

DATA COLLECTION NOTES

Households are registered and visited regularly by lay field-workers, with a frequency varying from once per year to several times per year. All vital events are registered at each such visit, and any deaths recorded are followed up with verbal autopsy interviews, usually undertaken by specially trained lay interviewers.

Data Processing

Data Editing

One cause of death record was inserted for every death where a verbal autopsy was not conducted. The cuase of death assigned in these cases is "XX VA not completed"

Other Processing

All records have been anaonymised by associating a randomly generated serial number with each case. To facilitate linkage to other data sets released on the INDEPTH Data Repository a linkage file can be requested from the investigators.

Data Appraisal

No content available