

# Bangladesh, Ghana, South Africa, Vietnam - The evolving demographic and health transition in four low- and middle-income countries

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## Overview

### Identification

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**ID NUMBER**

INDEPTH.GH001.Transitions.v1

### Version

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**VERSION DESCRIPTION**

V2

### Overview

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**ABSTRACT**

This study contributes evidence documenting the continued decline in all-cause mortality and changes in the cause of death distribution over time in four developing country populations in Africa and Asia. We present levels and trends in age-specific mortality (all-cause and cause-specific) from four demographic surveillance sites: Agincourt (South Africa), Navrongo (Ghana) in Africa; Filabavi (Vietnam), Matlab (Bangladesh) in Asia. We model mortality using discrete time event history analysis. This study illustrates how data from INDEPTH Network centers can provide a comparative, longitudinal examination of mortality patterns and the epidemiological transition. Health care systems need to be reconfigured to deal simultaneously with continuing challenges of communicable disease and increasing incidence of non-communicable diseases that require long-term care. In populations with endemic HIV, long-term care of HIV patients on ART will add to the chronic care needs of the community.

**KIND OF DATA**

Event history data

**UNITS OF ANALYSIS**

Individual

### Scope

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**NOTES**

Individual exposure and cause of death

**TOPICS**

Topic	Vocabulary	URI
Mortality [N01.224.935.698]	MeSH	<a href="http://www.ncbi.nlm.nih.gov/mesh">http://www.ncbi.nlm.nih.gov/mesh</a>
Cause of Death [N01.224.935.698.100]	MeSH	<a href="http://www.ncbi.nlm.nih.gov/mesh">http://www.ncbi.nlm.nih.gov/mesh</a>
Life Expectancy [N01.224.935.464]	MeSH	<a href="http://www.ncbi.nlm.nih.gov/mesh">http://www.ncbi.nlm.nih.gov/mesh</a>

### Coverage

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**GEOGRAPHIC COVERAGE (1)**

Demographic surveillance area : Matlab, Bangladesh

**GEOGRAPHIC COVERAGE (2)**

Demographic surveillance area : Navrongo, Ghana

**GEOGRAPHIC COVERAGE (3)**

Demographic surveillance area : Agincourt, South Africa

**GEOGRAPHIC COVERAGE (4)**

Demographic surveillance area : Filabavi, Vietnam

**UNIVERSE**

All resident individuals in the demographic surveillance area

## Producers and Sponsors

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**PRIMARY INVESTIGATOR(S)**

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Cornelius Debpuur, Paul Welaga, Abraham Oduro, Abraham Hodgson	Navrongo Health Research Centre, Ghana
Stephen Tollman, Mark Collinson, Kathleen Kahn	Agincourt Health and Population Unit, South Africa
Tran Khan Toan, Ho Dang Phuc, Nguyen Thi Kim Chuc	Filabavi Health and Demographic Surveillance Site, Vietnam

**OTHER ACKNOWLEDGEMENTS**

Name	Affiliation	Role
Kobus Herbst	INDEPTH Network	Data Anonymisation
Tathagata Bhattacharjee	INDEPTH Network	Dataset Publication

## Metadata Production

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**METADATA PRODUCED BY**

Name	Abbreviation	Affiliation	Role
iSHARE2 Technical Team	iS2TT	INDEPTH Network	Documentation of the study
INDEPTH Network	int.indepth	INDEPTH Network	agency
Kobus Herbst	KHe	INDEPTH Network	Documentation author

**DDI DOCUMENT VERSION**

V2.0

**DDI DOCUMENT ID**

DDI.INDEPTH.GH001.Transitions.v2

# Sampling

No content available

# Questionnaires

No content available

## Data Collection

### Data Collection Dates

Start	End	Cycle
1987-01-01	2009-12-31	N/A

### Time Periods

Start	End	Cycle
1987-01-01		Matlab, Bangladesh
1994-01-01		Agincourt, South Africa
1995-01-01		Navrongo, Ghana
1999-01-01		Filabavi, Vietnam

### Data Collection Mode

Face-to-face [f2f]

#### DATA COLLECTION NOTES

The Matlab HDSS site is situated in Matlab Upazila (sub-district) under Chandpur District in Bangladesh, about 55 km southeast of the capital, Dhaka. Established in 1966, fieldworkers visit each household every two months to update vital events. The current total population is about 225,000 people in 142 villages. Cause of death information is not available as recently as general mortality indicators for the other three HDSSs due to delays in physician review of the verbal autopsy interviews. For Matlab, data are available for all-cause and cause-specific mortality from 1987-2006.

The Agincourt HDSS is located in the Agincourt area of the Bushbuckridge Local Municipality, Ehlanzeni District, Mpumalanga Province of South Africa. Established in 1992, fieldworkers visit each household yearly to update vital events - with a current total population of 87,040 people living in 14,382 households and 26 villages. For Agincourt, data are available for all-cause mortality from 1994-2009, and for cause-specific mortality from 1994-2004.

The Navrongo HDSS covers the entire Kassena-Nankana and Kassena-Nankana West districts (formerly one district) of the Upper East region of Ghana. Since 1993 fieldworkers visit each household quarterly to update vital events - with a current total population of 152,000; over a third of which is below fifteen years of age. For Navrongo, data are available for all-cause mortality from 1995-2007, and for cause-specific mortality from 1995-2004.

The Filabavi HDSS is situated in Bavi district, a rural district of Hanoi Province in northern Viet Nam. Established in 1999, follow-up household surveys occur every three months to update vital events - the current total population is 52,000 in 11,089 households. For Filabavi, data are available for all-cause mortality from 1999-2007, and for cause-specific mortality from 2004-2007.

## Data Processing

### Data Editing

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Causes of death from the verbal autopsies for each site (using ICD-10 codes) are categorised into the following groups based on the Global Burden of Disease Study (16), with exceptions for important causes of death for two sites, which we include as a separate group:

Matlab and Filabavi: Communicable diseases (including diarrhea, malaria, malnutrition, maternal, other infectious diseases, perinatal, respiratory, and HIV); non-communicable diseases (including cancer, cardiovascular, congenital, diabetes, epilepsy, female genital cancer, kidney, liver, and upper GI bleeds); and injuries (including accidental injuries, assault, other external causes, suicide, and transport-related).

Agincourt: HIV/TB; other communicable diseases excluding HIV/TB (see above); non-communicable diseases (see above); and injuries (see above).

Navrongo: Malaria; other communicable diseases excluding Malaria (see above); non-communicable diseases (see above); and injuries (see above).

## **Data Appraisal**

No content available



# File Description

## **Variable List**

## Transitions\_V4

Content	This dataset has been built using data from 4 demographic surveillance sites: Matlab, Agincourt, Navrongo, and Filabavi. Data available include sex, age, time, survival status and cause of death for those who died for each individual observed. Cause of death information comes from physician coded verbal autopsy interviews and is collapsed into 3-4 categories that vary by site (excluding indeterminate causes). The data include one observation for each observed person-year lived by an individual, defining time-varying covariates at the beginning of the person-year. The time periods available vary by site.
Cases	7192226
Variable(s)	11
Structure	Type: Keys: ()
Version	V2
Producer	
Missing Data	

## Variables

ID	Name	Label	Type	Format	Question
V11	recnr	Sequential record nr	discrete	numeric	
V1	individual_id	Anonymised individual identifier	contin	numeric	
V2	site	DSS site indicator	discrete	numeric	
V3	male	Sex indicator	discrete	numeric	
V4	dies	indicator if dies in that person-year	discrete	numeric	
V5	age	age in years	contin	numeric	
V6	year	Year indicator	contin	numeric	
V7	age10	age in 10yr groups, 0-4 5-9 10+	discrete	numeric	
V8	age5	age in 5yr groups, 0-4 5-9 10-14	discrete	numeric	
V9	yr5	5-year calendar periods	discrete	numeric	
V10	cod_group	Cause of death indicator, DSS-varying	discrete	numeric	



**Sequential record nr (recnr)**

File: Transitions\_V4

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 12  
 Decimals: 0

Valid cases: 7192226  
 Invalid: 0

**Anonymised individual identifier (individual\_id)**

File: Transitions\_V4

**Overview**

Type: Continuous  
 Format: numeric  
 Width: 12  
 Decimals: 0  
 Range: 1-796633

Valid cases: 7192226  
 Invalid: 0  
 Minimum: 1  
 Maximum: 796633  
 Mean: 398190.4  
 Standard deviation: 229925.3

**Description**

Anonymised individual identifier

**DSS site indicator (site)**

File: Transitions\_V4

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 12  
 Decimals: 0  
 Range: 0-3

Valid cases: 7192226  
 Invalid: 0

**Description**

INDEPTH HDSS Centre contributing the data

**Sex indicator (male)**

File: Transitions\_V4

**Overview**

Type: Discrete  
 Format: numeric  
 Width: 12  
 Decimals: 0  
 Range: 0-1

Valid cases: 7192226  
 Invalid: 0

**Description**

Is this individual male

**indicator if dies in that person-year (dies)**

File: Transitions\_V4

**Overview**

## indicator if dies in that person-year (dies)

File: Transitions\_V4

Type: Discrete  
 Format: numeric  
 Width: 12  
 Decimals: 0  
 Range: 0-1

Valid cases: 7192226  
 Invalid: 0

## age in years (age)

File: Transitions\_V4

### Overview

Type: Continuous  
 Format: numeric  
 Width: 12  
 Decimals: 0  
 Range: 0-1051

Valid cases: 7192226  
 Invalid: 0  
 Minimum: 0  
 Maximum: 1051  
 Mean: 25.8  
 Standard deviation: 20.2

### Description

Age in years at the start of the person year of observation

## Year indicator (year)

File: Transitions\_V4

### Overview

Type: Continuous  
 Format: numeric  
 Width: 12  
 Decimals: 0  
 Range: 1987-2009

Valid cases: 7192226  
 Invalid: 0  
 Minimum: 1987  
 Maximum: 2009  
 Mean: 1998.8  
 Standard deviation: 5.6

### Description

Year of observation

## age in 10yr groups, 0-4 5-9 10+ (age10)

File: Transitions\_V4

### Overview

Type: Discrete  
 Format: numeric  
 Width: 12  
 Decimals: 0  
 Range: 0-80

Valid cases: 7192226  
 Invalid: 0  
 Minimum: 0  
 Maximum: 80  
 Mean: 22.1  
 Standard deviation: 19.4

### Description

Age in 10 year age groups, except for those under 10 where the age groups are in five year intervals

## age in 5yr groups, 0-4 5-9 10-14 (age5)

File: Transitions\_V4

### Overview

## age in 5yr groups, 0-4 5-9 10-14 (age5)

File: Transitions\_V4

Type: Discrete  
Format: numeric  
Width: 12  
Decimals: 0  
Range: 0-85

Valid cases: 7192226  
Invalid: 0  
Minimum: 0  
Maximum: 85  
Mean: 23.8  
Standard deviation: 20.1

### Description

Age group in five year intervals, all those older than 85 are included in the 85yr category

## 5-year calendar periods (yr5)

File: Transitions\_V4

### Overview

Type: Discrete  
Format: numeric  
Width: 12  
Decimals: 0  
Range: 1-5

Valid cases: 7192226  
Invalid: 0

### Description

5 year calendar periods starting 1985 up to 2009

## Cause of death indicator, DSS-varying (cod\_group)

File: Transitions\_V4

### Overview

Type: Discrete  
Format: numeric  
Width: 12  
Decimals: 0  
Range: 0-5

Valid cases: 7168421  
Invalid: 23805

