

## Trends and Causes of Under-five Deaths in Ethiopia, 2010-2014

**Background:** Globally, under-five mortality rate has declined by 53%, from an estimated rate of 91 in 1990 to 43 in 2015 deaths per 1000 live births. The average annual rate of reduction in under-five mortality has accelerated, from 1.8% per annum during 1990 through 2000 to 3.9% in the years 2000-2015<sup>1</sup>. In Ethiopia, under-five mortality declined by 47% over the 15-year period between 2000 and 2011, from 166 to 88 deaths per 1,000 live births<sup>2</sup>. The objective of this policy brief is to describe patterns and underlying causes of deaths among under five children in Ethiopian Universities Research Centers.

**Methods:** The Health and Demographic Surveillance System (HDSS) in six networked Ethiopian Universities Research Centers has been registering vital events (births, deaths, marital changes, in and out migrations) in different part of the country. The research centers follow an open dynamic cohort of geographically defined population and update the population every 3 to 6 months regularly with standardized procedures and tools. The mortality surveillance was undergoing in each research center where causes of deaths were assigned by two independent physician reviewers and a third physician was used when the first two disagree. Underlying causes of death were determined based on verbal autopsy coding together with WHO ICD 10 classifications. The analysis used causes of death data for deaths of under five children from the verbal autopsy and live births from the population update databases.

**Results:** During the five years period, a total of 3,444 deaths of under five children were registered of which 2,363 were infants and 1083 were children aged 1-4 years. A total of 48,545 live births were recorded in the same period which resulted in 48.0 infant and 70.9 under five deaths per 1000 live births. Infant and under five mortalities declined by 26.1% and 25.6% respectively over the five years period (Fig. 1).

The top five underlying childhood causes of death were sepsis, asphyxia, acute lower respiratory infections, intestinal infectious diseases and prematurity that contributed for 68.4% of all deaths. Deaths due to acute lower respiratory infection showed a declining trend and prematurity related deaths has been increasing trend while the pattern for other main causes of childhood death remained constant (Fig. 2).



Fig. 1: Infant and Under Five Mortality Rates by year, 2010-14

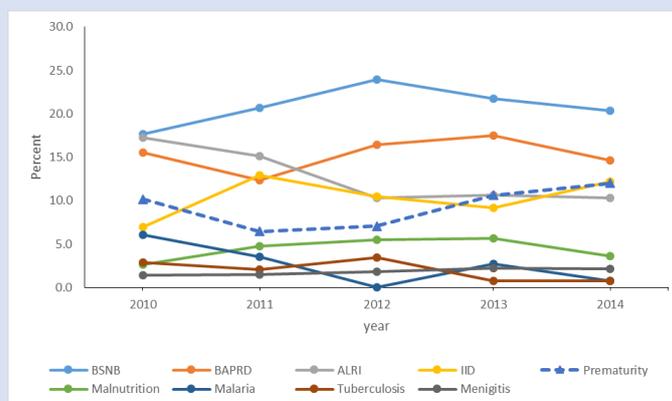


Fig. 2: Causes of under five children deaths by year, 2010-14

Malnutrition, intestinal infectious diseases and measles were most common causes of death for under five children in rural areas while asphyxia, acute lower respiratory infections, tuberculosis and prematurity were claiming the lives of under five children born to households residing in urban areas (Fig. 3).

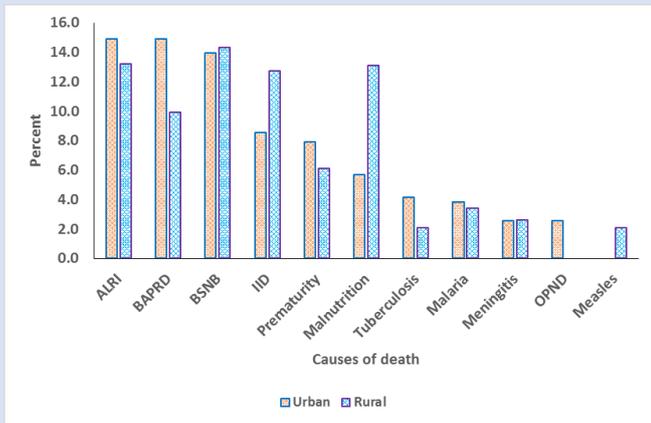


Fig. 3: Causes of Death among under five children by Residence, 2010-14

**Conclusion:** Though still high, infant and under-five mortality rates have been declining over the five years period among residents of Ethiopian Universities Research Centers. The main causes of childhood death include sepsis, asphyxia, acute lower respiratory infections, intestinal infectious diseases and prematurity. Under-five mortality inequalities between urban and rural areas were observed over the study period. Malnutrition, intestinal infectious diseases and measles were prevalent in rural areas whereas asphyxia, acute lower respiratory infections, tuberculosis and prematurity were common in urban settings

### Recommendations

1. Intensify efforts in increasing access to essential newborn care and immunization, especially in rural areas
2. Improve household hygiene and regular family deworming
3. Diversify household food sources and ensure food security in particular to rural households

### References

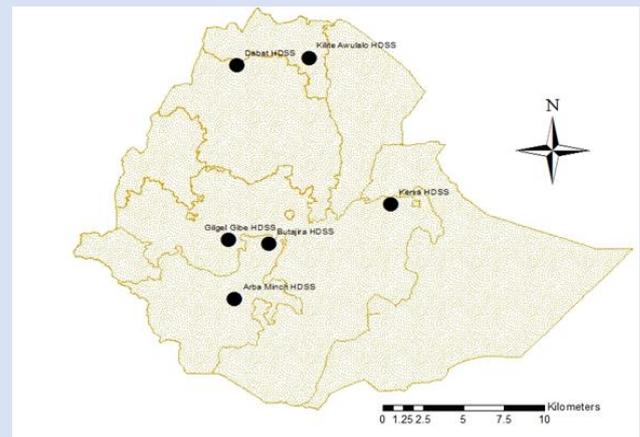
1. World Health Organization. Under five Mortality. Global Health Observatory Data. [http://www.who.int/gho/child\\_health/mortality/mortality\\_under\\_five\\_text/en/](http://www.who.int/gho/child_health/mortality/mortality_under_five_text/en/)

2. Central Statistical Agency, 2011. Ethiopian Health and Demographic Survey. ICF International Calverton, Maryland, USA

**Vision of the Ethiopian Universities Research Centers Network:** *To see evidence based decision making practices in health and development sectors in Ethiopia*

### Research Centers Profile and Location as of 2015

Name of site	Year established	Population	Active # of households	# of kebeles
Butajira	1987	77,583	17,313	10
Dabat	1996	68,471	16,693	13
Gilgel Gibe	2005	63,234	12,748	11
Kersa	2007	129,532	25,926	24
Kilte Awlalelo	2009	63,503	13,835	10
Arba Minch	2009	72,581	14,322	9
Total		474,904	100,837	77



Location of the Research Centers, Members of the INDEPTH Network

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