



Health and Demographic Surveillance Systems Methodology for Sustainable Development Goals

Produced for National Statistics Offices to encourage collaboration with INDEPTH Network

If the international community is to achieve the 17 Sustainable Development Goals (SDGs) to which it signed up in 2015, reliable data will be essential. Without it, governments will be unable to measure progress against the goals, nor to fine tune policies to make their attainment more likely. Testing new policies and programmes and monitoring the impact of old ones require robust data collected over a sustained period of time. Accurate and timely data will ensure that resources are not wasted on ineffective interventions, pointing policy-makers instead towards programmes that will hasten their country's progress towards the goals. Health and Demographic Surveillance Systems (HDSSs) provide methodologies and designs that can be replicated in national statistics and data systems. Many health interventions used routinely across the world were first trialled using HDSS platforms. HDSSs provide the engineering that can be applied in generating valid indicators.

In the low- and middle-income countries that are the primary focus of the SDGs, data collection is uneven, with many lacking the necessary financial or human resources. All however is not gloom, as a notable contribution in the developing world is by the 49 health and demographic surveillance systems that make up the INDEPTH Network. Operating currently in 18 countries in Africa, Asia and Oceania and bringing together the cream of international health and demography scientists, these HDSS sites have for decades been amassing a vast array of data on the health, wealth and major life events of over 3.8 million individuals. Panel data are the intellectual and museum value of data and statistics which contribute to understanding phenomena better over time. HDSSs have a distinct advantage by providing comparable longitudinal data and statistics across regions.

HDSSs conduct regular collection of household and individual-level data, often in hard to reach rural and urban communities, covering births, deaths, causes of death, marriages, morbidity, household income and migratory movements. They track trends in fertility and mortality rates and in the evolution of health threats. And they conduct studies in their communities to assess the impacts of health policies and programmes. In the low- and middle-income settings in which INDEPTH member sites are based, there are limited sources of such high-quality, trustworthy health, real time and population data. Thus for the specific locations within which they operate, HDSS data will be important for assessing progress against a number of the SDGs, and in particular the third goal of "ensuring healthy lives and promoting well-being for people of all ages." This goal contains 9 targets, with each target supported by indicators of progress. As the table below shows, INDEPTH members already produce extensive data on each of them:



How HDSS data promotes progress towards the healthy lives SDG		
Target	Indicators	Role of HDSS data
Target 1: By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births	<ul style="list-style-type: none"> i) Maternal mortality ratio ii) Proportion of births attended by skilled health personnel 	<p>INDEPTH sites collect cause of death data over time, including deaths during childbirth. They also track the proportion of births assisted by skilled birth attendants.</p> <p>The network's Working Group on Maternal and Newborn Health brings together scientists from across the network of HDSSs to study the epidemiology of maternal, newborn, infant and child health and the impact on it of health interventions.</p>
Target 2: By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births	<ul style="list-style-type: none"> i) Under-5 mortality rate ii) Neonatal mortality rate 	<p>All INDEPTH member centres track pregnancies, newborn births and deaths, and infant and under-5 morbidity and mortality on a longitudinal basis. They have amassed enormous databases on trends in and determinants of infant and child mortality in developing countries.</p>
Target 3: By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases	<ul style="list-style-type: none"> i) Number of new HIV infections per 1,000 uninfected population, by age, sex and key populations ii) Tuberculosis incidence per 1,000 population iii) Malaria incidence per 1,000 population iv) Hepatitis B incidence per 100,000 population v) Number of people requiring interventions against neglected tropical 	<p>INDEPTH sites gather longitudinal morbidity and mortality data on a wide range of communicable diseases including all those in Target 3. They also test a range of interventions to control them – for example conducting drug trials in Mozambique which showed that chloroquine was no longer effective for treating malaria, and showing in a rural South African</p>



	diseases	community how antiretroviral therapy for HIV/AIDS extended adult life expectancy by more than 11 years.
Target 4: By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	<p>i) Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease</p> <p>ii) Suicide mortality rate</p>	<p>INDEPTH sites track non-communicable disease mortality and morbidity via verbal autopsy data. A multi-site study of more than 80,000 deaths over fifteen years in African and Asian demographic surveillance areas found that NCDs accounted for 36% of deaths. Another multi-site study is gathering baseline data on the prevalence of and risk factors for communicable diseases in Sub-Saharan Africa, including obesity, hypertension, diabetes and chronic kidney diseases. INDEPTH's Adult Health and Aging Working Group, meanwhile, monitors the evolution of non-communicable diseases in Africa as the continent undergoes the health transition.</p>
Target 5: Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol	<p>i) Coverage of treatment interventions for substance use disorders</p> <p>ii) Harmful use of alcohol rates</p>	<p>HDSS verbal autopsy data are a rare and valuable source of information on deaths caused by substance abuse in low- and middle-income countries and are helping to strengthen burden of disease data in Africa and Asia. INDEPTH is also conducting a multi-site five-year project on adolescent health,</p>



		including intervention studies to assess the effect on reducing addictive behaviours of marketing campaigns, conditional cash transfers and training of health workers.
Target 6: By 2020, halve the number of global deaths and injuries from road traffic accidents	i) Death rate due to road traffic injuries	INDEPTH sites' verbal autopsy data monitors morbidity and mortality due to road traffic accidents – a rare example of reliable road accident data in low- and middle-income countries.
Target 7: By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes	i) Proportion of women of reproductive age who have their need for family planning satisfied by modern methods ii) Adolescent birth rate (aged 10-14 years; aged 15-19 years) per 1,000 women in that age group	INDEPTH's Working Group on Fertility and Family Planning is examining data on access to reproductive health services collected across the network. It looks at trends in and determinants of the uptake of such services, focusing on adolescent females in Africa. As an institutional partner on the Population Council's EVIDENCE project, moreover, INDEPTH is working to use data strategically to expand access to reproductive health services worldwide.
Target 8: Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all	i) Coverage of essential health services ii) Number of people covered by health insurance or a public health system per 1,000 people	HDSS sites monitor communities' access to and uptake of essential health services, while also conducting numerous studies into vaccine effectiveness. The oral cholera vaccine tested at Matlab HDSS in Bangladesh, for example, is now recommended by the World



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		Health Organisation. The INDEPTH Effectiveness and Safety Studies of Antimalarials in Africa are producing the largest available database on antimalarial drug impact.
Target 9: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	<ul style="list-style-type: none"> i) Mortality rate attributed to household and ambient air pollution ii) Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene iii) Mortality rate attributed to unintentional poisoning 	INDEPTH's longitudinal data monitors the impacts of environmental change on health and migration. The network's Working Group on Environment and Health tests interventions to mitigate and adapt to climate change in Sub-Saharan Africa.

As a key source of robust community-level health data in many of the countries where its members operate, the INDEPTH platform is uniquely placed to assist governments of low- and middle-income countries to track progress against and hasten the achievement of the Sustainable Development Goals. Whether it is to monitor health and population trends over time or to test policy interventions, our network of scientists and surveillance centres stands ready to develop tailor-made research solutions that will help make attaining the goals a reality.

For further information or to set up a meeting to discuss collaboration, please contact:

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