MDGs 4 and 5: What Can HDSS sites contribute?

Don de Savigny

INDEPTH Scientific Advisory Committee
Millennium Development Goals

“Obstacles - are those frightful things you see when you take your eyes off your goal”

Henry Ford
MDG 4
Reduce 1990 under-five mortality by 66% by 2015

MDG 5
Reduce 1990 maternal mortality by 75% by 2015
MDG 4
How are we doing?

In countries with INDEPTH Sites
Under-five mortality decline progress

Countries need 4.4% annual declines to achieve MDG4

Can we achieve Millennium Development Goal 4? New analysis of country trends and forecasts of under-5 mortality to 2015

Christopher J L Murray, Thomas Laakso, Kenji Shibuya, Kenneth Hill, Alan D Lopez

Lancet 2007; 370: 1040-54

<table>
<thead>
<tr>
<th>Country</th>
<th>Probability of achieving MDG 4</th>
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<tr>
<td>Vietnam</td>
<td>84.00%</td>
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<tr>
<td>Indonesia</td>
<td>50.00%</td>
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<td>Bangladesh</td>
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<td>Malawi</td>
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<td>Burkina Faso</td>
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<td>Chad</td>
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<td>Ghana</td>
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<td>Guinea Bissau</td>
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<tr>
<td>Zambia</td>
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</table>

"Prediction is very difficult, especially about the future"

Niels Bohr
MDG 4 Progress in Asia

Data source: Calculated from UN Inter-agency Group on Child Mortality Estimation Sept 16, 2010
MDG 4 Progress in Western & Central Africa

Data source: Calculated from UN Inter-agency Group on Child Mortality Estimation Sept 16, 2010
What does this mean for a typical high mortality INDEPTH country?

Example: Tanzania
Tanzania national MDG 4 Progress?

Needed trajectory 4.4% annual decline

Tanzania MDG4 Target 48.0
Tanzania national MDG 4 Progress?
DHS data 1992 to 1999

Lost decade of the ’90’s

Tanzania national MDG 4 Progress?
Four DHS surveys 1992 to 2004

Significant drop before GFATM, PEPFAR, PMI.
But still “off track”

Tanzania national MDG 4 Progress?
Six DHS Surveys 1992 to 2010

Still dropping,
But still “off track”

Source data: Tanzania DHS All Surveys, Tanzania National Bureau of Statistics & Macro International.
TZ Under five mortality 1990-2010
Three things not normally considered

1. These are not points but 5 year averages
2. Estimates should be lagged 2.5 years
3. What is hidden in these averages?

Source data: Tanzania DHS All Surveys, Tanzania National Bureau of Statistics & Macro International.
Under five mortality 1990-2010
Accelerating & back on track

1990 -1999  1% annual decline

2000 – 2007  10% annual decline

TZ under five mortality
Unpacking the 2004 & 2008 DHS by year

Point rate in 2004 is 83
(CI 70.1 - 96.3)
A 40% reduction

Point rate in 2007 is 59
(CI 47.1 – 71.1)
A 58% reduction

Child survival gains in Tanzania: analysis of data from demographic and health surveys

Honorati Masanja, Don de Savigny, Paul Smithson, Joanna Schellenberg, Theopista John, Conrad Mbuya, Gabriel Upunda, Ties Boerma, Cesar Victora, Tom Smith, Hassan Mshinda

Lancet 2007; 370: 1040-54

Latest point is within the forecast

National MDG 4 Possible
Under-five mortality Navrongo HDSS

MDG 4 progress and achievement seen first in the HDSS

67% Reduction: District MDG achieved in 2009
"There is compelling evidence that several low-income countries in sub-Saharan Africa are experiencing an accelerated decline in child mortality. Our descriptive analysis does not explain this. "
What a remote rural DSS shows
MDG 5 Maternal Mortality 2010

Maternal mortality: A huge measurement challenge

Distribution of deaths for Ghana

Source: WHO National Burden of Disease Summary Tables (Version 2.1 November 2006) for Ghana for the year 2004
HDSS tracking of District MDG 5


MDG 5 progress and achievement seen first in the HDSS

Key to political and technical inspiration of what works and what does not


MDG 5 progress and achievement seen first in the HDSS

Key to political and technical inspiration of what works and what does not
MDG 5 & maternal mortality

- Patchy and uncertain / unknown progress
- HDSS (and DHS) under-powered to detect annual trends in maternal mortality, but can show plausible trends within five year periods
- HDSS could do a better job now of:
  - registering pregnancies, documenting obstetric care, and
  - explaining determinants of each maternal death -- steering:
    - health system change
    - population behaviour change
"The trouble with our times is that the future is not what it used to be."

Paul Valery

Telling the future by looking at the past (DHS) assumes that conditions remain constant. This is like driving a car by looking in the rearview mirror.

With prospective surveillance in HDSS we can do better.

What about SRS with VA?
What can INDEPTH HDSS sites do for MDGs?

STUDY DESIGN ARTICLE

Monitoring the millennium development goals: the potential role of the INDEPTH Network

Martin Bangha, Alioune Diagne, Ayaga Bawah and Osman Sankoh*

INDEPTH Network, Accra, Ghana

Global Health Action 2010, 3: 5517
INDEPTH well placed for MDG4

But needs expansion in Central Africa

"The future is here. It's just not widely distributed yet."

William Gibson
The current INDEPTH publication galaxy

1,288 Publications

- Measles
- Respiratory
- Tuberculosis
- Malaria
- HIV
- Socioeconomic factors
- Maternal health
- Child mortality
- ITNs
- Methods and Surveillance
INDEPTH HDSS Publications 1990-2009

Millennium Development Goals

HIV/AIDS (MDG 6)

0

Tuberculosis (MDG 6)

Malaria (MDG 6)

Child Mortality (MDG 4)

Maternal Mortality (MDG 5)

n = 622 references
For the MDGs, what INDEPTH HDSSs have now ....

- Research infrastructure in high mortality settings
- Pregnancy, birth, mortality, & cause of death surveillance
- Ability to evaluate health interventions
- Equity disaggregation (MDGs for the poorest?)

Six things INDEPTH can and needs to do better ....

1. **Report** mortality in real-time over next five years
2. **Add** district health system observatory function
3. **Measure** system-level interventions and monitor system change
4. **Monitor** mortality contextual dynamics
5. **Expand** in Central Africa
6. **Explain** reasons for acceleration (or stagnation) in MDGs 4 & 5
Thank you

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