



# WEEKLY EPIDEMIOLOGICAL REPORT

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## Child survival: Where we stand - Part II

Part I of this article was published in the last issue of the Weekly Epidemiological Report.

### Why child survival matters

Investing in the health of young children makes sense for a number of reasons beyond the pain and suffering caused by even one child's death. Depriving infants and young children of basic health care and denying them the nutrients needed for growth and development sets them up to fail in life. But when children are well nourished and cared for and provided with a safe and stimulating environment, they are more likely to survive, to have less disease and fewer illnesses, and to fully develop thinking, language, emotional and social skills. When they enter school, they are more likely to succeed. And later in life, they have a greater chance of becoming creative and productive members of society.

Investing in children is also wise from an economic perspective. According to the World Bank, immunization and vitamin A supplementation are two of the most cost-effective public health interventions available today. Improving vitamin A status can strengthen a child's resistance to disease and decrease the likelihood of childhood mortality. For only a small sum, a child can be protected from vitamin A deficiency and a number of deadly diseases, including diphtheria, pertussis, tetanus, polio, measles, childhood tuberculosis, hepatitis B and Hib (*Haemophilus influenzae* type b), which is a major

cause of pneumonia and meningitis. Providing cotrimoxazole, a low-cost antibiotic, to HIV-positive children dramatically reduces mortality from opportunistic infections. Improvements in child health and survival can also foster more balanced population dynamics. When parents are convinced that their children will survive, they are more likely to have fewer children and provide better care to those they do have – and countries can invest more in each child.

### Newborn survival

Until the mid to late 1990s, estimates of the number of child deaths occurring during the neonatal period (the first month of life) were drawn from rough historical data rather than from specific surveys. More rigorous estimates for newborn deaths emerged in 1995 and 2000, as data from reliable household surveys became available. Analysis of these data made it evident that previous estimates had seriously understated the scale of the problem. Although the global neonatal mortality rate has decreased slightly since 1980, neonatal deaths have become proportionally much more significant because the reduction of neonatal mortality has been slower than that of under-five mortality: Between 1980 and 2000, deaths in the first month of life declined by a quarter, while deaths between one month and five years declined by a third.

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The latest evidence is that 4 million babies die each year in their first month of life, and up to half of these die in their first 24 hours – a child is about 500 times more likely to die in the first day of life than at one month of age. Neonatal mortality accounts for almost 40 per cent of all under-five deaths and for nearly 60 per cent of infant deaths.

The largest absolute number of newborn deaths occurs in South Asia – India contributes a quarter of the world total – but the highest national rates of neonatal mortality occur in sub-Saharan Africa. A common factor in these deaths is the health of the mother – each year more than 500,000 women die in childbirth or from complications during pregnancy, and babies whose mothers have died during childbirth have a much greater chance of dying in their first year than those whose mothers remain alive. Even these figures understate the vast scale of the problems that affect child health during the neonatal period. For example, more than a million children who survive birth asphyxia each year go on to suffer such problems as cerebral palsy, learning difficulties and other disabilities. For every newborn baby who dies, another 20 suffer birth injury, complications arising from preterm birth or other neonatal conditions. Significant improvements in the early neonatal period will depend on essential interventions for mothers and babies before, during and immediately after birth. According to the latest estimates for 2000–2006, at present in the developing world, one quarter of pregnant women do not receive even a single visit from skilled health personnel (doctor, nurse, midwife); only 59 per cent of births take place with the assistance of a skilled attendant; and just over half take place in a health facility. Averting neonatal deaths is pivotal to reducing child mortality.

The Lancet Neonatal Survival Series, published in 2005, estimated that 3 million of the 4 million deaths could be prevented each year if high coverage (90 per cent) is achieved for a package of proven, cost-effective interventions that are delivered through outreach, families and communities, and facility-based clinical care across a continuum of neonatal care (antenatal, intrapartum and postpartum). While increasing skilled care is essential, the Neonatal Survival Series underlines the importance of interim solutions that can save almost 40 per cent of newborn lives in community settings. Expanding programmes that prevent mother-to-child transmission of HIV is also crucial.

Actions required to save newborns include setting evidence-based, results-oriented plans at the national level with specific strategies to reach the poorest, greater funding, agreed targets for neonatal mortality reduction, and promotion of greater harmonization and accountability on the part of stakeholders at the international level.

### **The main proximate causes of child death**

The countries and regions in which children under five are dying in large numbers are well known, and the main proximate causes of premature deaths and ill health are also well established. Almost 40 per cent of all under-five deaths occur during the neonatal period, the first month of life, from a variety of complications. Of these neonatal deaths, around 26 per cent – accounting for 10 per cent of all under-five deaths – are caused by severe infections. A significant proportion of these infections is caused by pneumonia and sepsis (a serious blood-borne bacterial infection that is also treated with antibiotics). Around 2 million children under five die from pneumonia each year – around 1 in 5 deaths globally.

In addition, up to 1 million more infants die from severe infections including pneumonia, during the neonatal period. Despite progress since the 1980s, diarrhoeal diseases account for 17 per cent of under-five deaths. Malaria, measles and AIDS, taken together, are responsible for 15 per cent of child deaths. Many conditions and diseases interact to increase child mortality beyond their individual impacts, with under-nutrition contributing up to 50 per cent of child deaths.

Unsafe water, poor hygiene practices and inadequate sanitation are not only the causes of the continued high incidence of diarrhoeal diseases, they are a significant contributing factor in under-five mortality caused by pneumonia, neonatal disorders and undernutrition.

### **Source**

The state of the world's children 2008 . United Nations Children's Fund (UNICEF) December 2007 [[www.unicef.org](http://www.unicef.org)]

11<sup>th</sup> - 17<sup>th</sup> Oct 2008 (42<sup>nd</sup> Week)

Table 1: Vaccine-preventable Diseases &amp; AFP

Disease	No. of Cases by Province									Number of cases during current week in 2008	Number of cases during same week in 2007	Total number of cases to date in 2008	Total number of cases to date in 2007	Difference between the number of cases to date between 2008 & 2007
	W	C	S	N	E	NW	NC	U	Sab					
Acute Flaccid Paralysis	00	02 MT=1 KD=1	00	00	01 TR=1	00	00	00	00	03	03	82	68	+20.5%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	00.0%
Measles	00	00	00	00	00	00	00	00	00	00	01	100	65	+53.8%
Tetanus	00	00	00	00	00	00	00	00	00	00	00	31	30	+3.3%
Whooping Cough	00	00	00	00	00	00	00	00	00	00	01	43	36	+19.4%
Tuberculosis	88	109	06	18	25	00	10	18	10	280	96	6788	7833	-13.3%

Table 2: Newly Introduced Notifiable Diseases

11<sup>th</sup> - 17<sup>th</sup> Oct 2008 (42<sup>nd</sup> Week)

Disease	No. of Cases by Province									Number of cases during current week in 2008	Number of cases during same week in 2007	Total number of cases to date in 2008	Total number of cases to date in 2007	Difference between the number of cases to date between 2008 & 2007
	W	C	S	N	E	NW	NC	U	Sab					
Chicken-pox	06	13	12	00	07	09	05	10	16	78	26	4448	2804	+58.6%
Meningitis	06 GM=1 CB=4 KL=1	02 NE=2	01 HA=1	00	03 BT=3	02 PU=2	01 PO=1	00	01 KG=1	16	15	1102	556	+98.2%
Mumps	01	03	03	03	07	02	08	01	06	34	23	2454	1811	+35.5%

Key to Table 1 &amp; 2

Provinces: W=Western, C=Central, S=Southern, N=North, E= East, NC=North Central, NW=North Western, U=Uva, Sab=Sabaragamuwa.

DPDHS Divisions: CB=Colombo, GM=Gampaha, KL=Kalutara, KD=Kandy, ML=Matale, NE=Nuwara Eliya, GL=Galle, HB=Hambantota, MT=Matara, JF=Jaffna, KN=Killinochchi, MN=Mannar, VA=Vavuniya, MU=Mullaitivu, BT=Batticaloa, AM=Ampara, TR=Trincomalee, KM=Kalmunai, KR=Kurunegala, PU=Puttalam, AP=Anuradhapura, PO=Polonnaruwa, BD=Badulla, MO=Moneragala, RP=Ratnapura, KG=Kegalle.

Table 3: Laboratory Surveillance of Dengue Fever 11<sup>th</sup> - 17<sup>th</sup> Oct 2008 (42<sup>nd</sup> Week)

Samples	Number tested		Number positive *		Serotypes									
					D <sub>1</sub>		D <sub>2</sub>		D <sub>3</sub>		D <sub>4</sub>		Negative	
	GT	AH	GT	AH	GT	AH	GT	AH	GT	AH	GT	AH	GT	AH
Number for current week	00	02	00	00	00	00	00	00	00	00	00	00	00	00
Total number to date in 2008	124	138	09	23	00	00	06	08	01	08	00	00	02	00

Sources: Genetech Molecular Diagnostics &amp; School of Gene Technology, Colombo [GT] and Genetic Laboratory Asiri Surgical Hospital [AH]

\* Not all positives are subjected to serotyping.

NA= Not Available.

Data Sources:

Weekly Return of Communicable Diseases: Diphtheria, Measles, Tetanus, Whooping Cough, Human Rabies, Dengue Haemorrhagic Fever, Japanese Encephalitis, Chickenpox, Meningitis, Mumps.

Special Surveillance: Acute Flaccid Paralysis.

**Table 4: Selected notifiable diseases reported by Medical Officers of Health**  
11<sup>th</sup> - 17<sup>th</sup> Oct 2008 (42<sup>nd</sup> Week)

DPDHS Division	Dengue Fever / DHF*		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Human-Rabies		Returns Received
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	
Colombo	14	1393	03	222	00	14	07	132	20	112	21	849	02	06	02	98	00	00	54
Gampaha	09	842	05	183	00	20	00	49	00	103	25	699	00	07	02	158	00	06	64
Kalutara	05	417	05	274	00	11	00	61	00	26	18	535	00	03	00	41	00	02	75
Kandy	09	243	09	266	00	07	02	57	00	98	14	424	01	90	03	114	00	02	80
Matale	02	135	02	179	00	04	00	48	00	13	04	665	00	02	02	27	00	00	67
Nuwara	02	27	05	237	00	03	00	235	00	166	05	56	00	36	02	106	00	01	69
Galle	00	92	03	171	00	20	00	17	00	43	10	361	00	14	00	08	00	05	71
Hambantota	02	87	02	93	00	05	00	07	00	12	02	93	06	90	02	16	00	01	82
Matara	11	282	07	188	00	13	00	35	09	15	07	422	10	209	00	14	00	01	65
Jaffna	03	57	01	140	00	04	06	246	00	16	00	01	01	152	01	36	00	00	50
Kilinochchi	00	00	00	35	00	00	00	01	00	04	00	02	00	00	00	01	00	00	00
Mannar	00	25	00	21	00	06	00	155	00	00	00	00	00	01	00	14	00	00	50
Vavuniya	00	12	00	58	01	03	00	13	01	20	00	05	00	01	00	05	00	00	100
Mullaitivu	00	00	00	17	00	00	00	16	00	13	00	00	00	01	00	09	00	01	00
Batticaloa	01	86	10	145	00	07	01	26	00	29	00	09	00	00	02	91	00	09	55
Ampara	00	31	01	254	00	00	00	09	00	283	00	23	00	00	01	13	00	00	14
Trincomalee	00	177	05	103	00	01	00	13	00	14	00	30	00	16	00	13	00	00	60
Kurunegala	02	304	02	201	00	14	00	52	00	23	06	595	00	29	02	69	00	06	58
Puttalam	00	277	10	100	00	08	03	151	00	27	03	59	00	37	00	29	01	05	44
Anuradhapu	01	118	07	104	00	10	00	12	01	10	01	237	00	11	00	14	00	03	47
Polonnaruw	00	62	02	121	00	01	00	25	00	23	00	65	00	01	00	19	00	00	71
Badulla	03	84	19	433	01	06	02	121	00	96	01	61	01	108	05	138	00	01	60
Monaragala	00	53	12	331	00	03	01	40	00	119	00	90	01	98	01	46	00	00	73
Ratnapura	00	250	03	339	00	32	00	49	00	68	04	189	00	78	00	50	00	00	72
Kegalle	03	386	04	274	00	26	01	71	01	12	13	470	00	63	02	477	00	01	82
Kalmunai	00	36	01	242	00	02	01	11	00	16	00	03	00	03	00	25	00	00	77
<b>SRI LANKA</b>	<b>67</b>	<b>5476</b>	<b>118</b>	<b>4731</b>	<b>02</b>	<b>220</b>	<b>24</b>	<b>1652</b>	<b>32</b>	<b>1361</b>	<b>134</b>	<b>5943</b>	<b>22</b>	<b>1056</b>	<b>27</b>	<b>1631</b>	<b>01</b>	<b>44</b>	<b>63</b>

Source: Weekly Returns of Communicable Diseases (WRCD).

\*Dengue Fever / DHF refers to Dengue Fever / Dengue Haemorrhagic Fever.

\*\*Timely refers to returns received on or before 25 October, 2008 Total number of reporting units =238. Number of reporting units data provided for the current week: 215

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