- Control of deaths due to diarrhoeal diseases: Education and use of Oral Rehydration Salts are advocated for early treatment of diarrhoea and to prevent deaths due to this disease. ORS was introduced in India in 2004.
- Supplementation with micronutrients such as Vitamin A and iron.
- Universal Immunization Programme: Children are immunized against six vaccine preventable diseases. They include polio, measles, DPT and BCG.

Integrated Management of Neonatal and Childhood Illnesses

Integrated Management of Neonatal and Childhood Illnesses (IMNCI) was started on a pilot basis in 2004 through UNICEF. It has been incorporated into RCH since 2005. By 2007, the initiative has been launched in all districts. Its strategy encompasses a range of interventions to prevent and manage five major childhood illnesses. They are: Acute Respiratory Infections, diarrhoea, measles, malaria and malnutrition and the major cause of neonatal mortality, sepsis. It also teaches about nutrition including breastfeeding promotion, complementary feeding and micronutrients.

The major components of this strategy are:

- Strengthening the skills of the health care workers
- Strengthening the health care initiative
- Involvement of the community

According to latest government data, 37,337 health personnel have been trained in IMNCI. [7]

Table 6: Statewise Breakup of Personnel trained

States	No. of personnel trained
Madhya Pradesh	2243
Rajasthan	1108
Bihar	1367
Chhattisgarh	88
Uttar Pradesh	1167
Orissa	5196
Jammu & Kashmir	5
Arunachal Pradesh	60
Tripura	6
Punjab	2107
Haryana	607
Karnataka	1210
Gujarat	14002
Tamil Nadu	1438
Maharashtra	6580
Andaman Island	150

Source: *Annual Report: 2007-08, Ministry of Health and Family Welfare, Govt of India*

Home Based New Born Care

The government has approved the implementation of Home Based New Born Care. Accredited Social Health Activists (ASHAs) will be trained in identified aspects of newborn care during the second year of their training.

The programme shall be launched in the five high focus states of Madhya Pradesh, Rajasthan, Bihar, Chhattisgarh and Uttar Pradesh. In addition, facility based assessment of the needs for newborn care is being carried out in 10 states so that an appropriate facility based newborn care model can be initiated.[7]

The eleventh Five Year Plan (2007-2012) aims to develop specific interventions to address malnutrition, neonatal, and infant mortality. Home based neonatal care will be provided, including emergency life saving measures. Traditional Birth Attendants shall be trained to turn them into Skilled Birth Attendants. They would ensure proper deliveries, whether at home or an institution. Immunization programmes shall be strengthened to eliminate neonatal tetanus and emphasis shall be given to breastfeeding and reduction of anaemia.[8]

Endnotes

1. *"Health Status Statistics: Mortality," World Health Organization (see http://www.who.int/healthinfo/statistics/ indneonatalmortality/en/).*
2. *"Annual Report: 2005-06," Ministry of Health and Family Welfare, Govt of India.*
3. *"Report of the Steering Committee of Family Welfare," Steering Committees for 10th Five Year Plan, Planning Commission, Govt of India.*
4. *"Neonatal and Perinatal Mortality: Country, Regional and Global Estimates," World Health Organization, 2006.*
5. *"Student's Handbook for Integrated Management of Neonatal and Childhood Illnesses," World Health Organization and Ministry of Health and Family Welfare, Govt of India, 2003.*
6. *"The State of the World's Children," United Nations Children's Fund, Dec 2007.*
7. *"Annual Report: 2007-08," Ministry of Health and Family Welfare, Govt of India.*
8. *Eleventh Five Year Plan 2007-12, Social Sector, Volume II, Planning Commission, Govt of India.*

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NEONATAL MORTALITY IN INDIA

Issue Brief

Highlights

- Mortality during neonatal period (0-28 days) is considered a key indicator of both maternal and newborn health. In India, about two-thirds of all deaths during infancy take place during the neonatal period.
- Although improved access to immunization, health care and nutrition programme have resulted in substantial decline in infant mortality rate, decline in neonatal mortality rate has been very slow.
- The major causes of neonatal mortality are pre-term births, severe infections such as sepsis, birth asyphixia, tetanus, and diarrhoea.
- The neonatal mortality rate is measured by the National Family Health Survey (NFHS) and the Sample Registration System (SRS). India's neonatal mortality rate is measured as 39 according to NFHS while it is 37 according to SRS.
- Infant mortality rates are sensitive indicators of inequity and poverty. Therefore, neonatal mortality rates vary based on differences in socio-economic characteristics such as religion, caste, and wealth.
- The largest absolute number of new born deaths occurs in South Asia but the highest national rates of neonatal mortality occur in sub-Saharan Africa.
- The government has initiated various measures to tackle the problem of neonatal mortality. Some of the important measures are the Integrated Management of Neonatal and Childhood Illnesses and Home Based New Born Care.
- The Eleventh Five Year Plan aims to develop specific interventions to address malnutrition, neonatal, and infant mortality.

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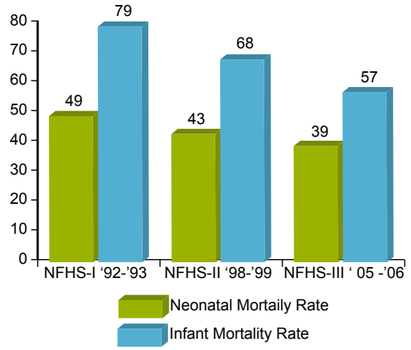
Issue

Mortality during neonatal period (0-28 days after birth) is considered a key indicator of both maternal and newborn health. Neonatal mortality is defined as the number of deaths during the first 28 days of life per 1,000 live births in a given year.[1] Neonatal deaths may be sub-divided into early neonatal deaths, occurring during the first seven days of life and late neonatal deaths, occurring after the seventh day but before the child completes 28 days.

In preparing child mortality reduction strategies it is important for countries to know the magnitude of neonatal mortality. In India, about two-thirds of all deaths during infancy take place during the first month of life. About 50% of these are accounted for during the first week of life.[2]

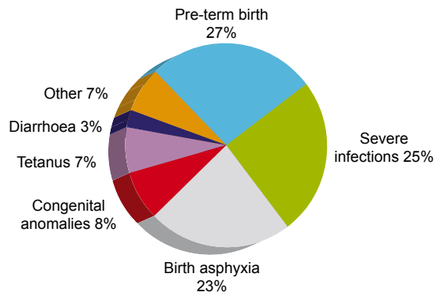
Improved access to immunization, health care and nutrition programmes have resulted in substantial decline in infant mortality rate (IMR). However, the decline in neonatal mortality has been very slow.[3]

Figure 1: Trends in Neonatal Mortality Rates (NMR)



Source: *National Family Health Survey 3, 2005-06*

Figure 2: Causes of neo-natal mortality



Sources: *Child and Adolescent Health and Development, Progress Report 2006-07, World Health Organization*

Causes and determinants of neonatal deaths and stillbirths differ from those causing postneonatal and child deaths. The major causes of NMR are pre-term births, severe infections (mainly sepsis/pneumonia), birth asphyxia, etc. They also stem from poor maternal health, inadequate care during pregnancy, inappropriate management of complications during pregnancy and delivery, poor hygiene during delivery and the first critical hours after birth, and lack of newborn care.[4]

Goals

Many countries, including India, have set under-five mortality reduction as their key development goal, as suggested by various international conferences.

Table 1: Goals for reducing IMR and NMR

Current Status		National Rural Health Mission 2012	Millennium Development Goals 2015
IMR	58	30	27
NMR	37	< 20*	< 19*

**Estimated*

Source: *Annual Report 2007-08, Ministry of Health and Family Welfare, Govt of India*

Trends in neonatal mortality deaths

The NFHS and the Sample Registration System (SRS) are the two sources of data regarding NMR in India. NMR varies across states.

Table 2: Statewise Neonatal Mortality Rate

State	NFHS-III	SRS 2006
Chhattisgarh	51	43
Jharkhand	49	29
Uttar Pradesh	48	48
Assam	45	35
Orissa	45	52
Madhya Pradesh	45	51
Rajasthan	44	45
Andhra Pradesh	40	33
Bihar	40	32
West Bengal	38	28
Arunachal Pradesh	34	-
Gujarat	33	38
Tripura	33	-
Maharashtra	32	27
Jammu and Kashmir	30	39
Delhi	29	22
Karnataka	29	28
Punjab	28	30
Uttarakhand	28	-
Himachal Pradesh	27	30
Harayana	24	34
Meghalaya	24	-
Nagaland	20	-
Sikkim	19	-
Tamil Nadu	19	24
Manipur	19	-
Mizoram	16	-
Kerala	11	10
Goa	9	-
All-India	39	37

Sources: *NFHS-III (2005-06) and "Statewise progress as of Dec 31, 2008," National Rural Health Mission, Govt of India.*

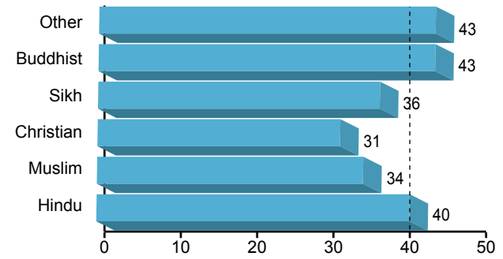
Infant and childhood mortality are sensitive indicators of inequity and poverty. Thus, children who are most commonly and severely ill, who are malnourished and who are most likely to die of their illness belong to the most vulnerable and underprivileged populations of society.[5] In India, these children mostly reside in rural areas, are minorities or from a backward caste. The following tables and figures highlight the differences in NMR based on socio-economic categories.

Table 3: Trends in NMR by Place of Residence

	NFHS-III	NFHS-II	NFHS-I
Rural	42	54	57
Urban	28	36	35

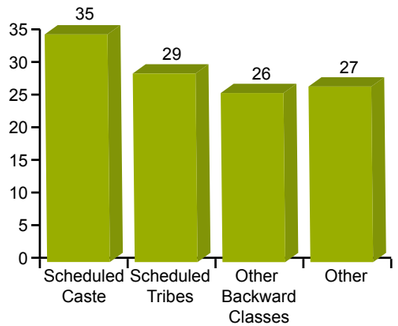
Source: *National Family Health Survey-III, 2005-06*

Figure 3: Trends in NMR by Religion



Source: *National Family Health Survey-III, 2005-06*

Figure 4: Trends in NMR by Caste



Source: *National Family Health Survey-III, 2005-06*

Table 4: Trends in NMR by Wealth Index

Lowest	Second	Middle	Fourth	Highest
39	41	32	31	21

Source: *National Family Health Survey-III, 2005-06*

Table 5: Trends in NMR by Gender

	Male	Female
NMR	41	37

Source: *National Family Health Survey-III, 2005-06*

International Comparison

Although the global neonatal mortality rate has decreased slightly since 1980, neonatal deaths have become proportionally much more significant. This is 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. According to latest estimates, four million babies die each year in their first month of life.

The largest absolute number of new born deaths occurs in South Asia but the highest national rates of neonatal mortality occur in sub-Saharan Africa.[6]

Table 6: Global Rates of Neonatal Mortality

Country	Neonatal Mortality Rate
Pakistan	53
Botsowana	46
Ethiopia	41
Nepal	32
China	18
Sri Lanka	08
USA	04
Switzerland	03
United Kingdom	03

Source: World Health Organization Statistical Information System

Government Initiatives

Significant improvements in the early neonatal period will depend on essential interventions for mothers and babies before, during and immediately after birth. An estimated 3 to 4 million deaths could be prevented each year if high coverage 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 range of neonatal care.

The Ministry of Health and Family Welfare has implemented several programmes to address the issue of high infant and child mortality in the country. National Rural Health Mission's Reproductive and Child Health Care (RCH) Programme focuses on reducing neonatal, infant and child mortality.[7]

Strategies

- Integrated management of neonatal and childhood illnesses.
- Home based new born care.
- Promotion of breastfeeding and complementary feeding.
- Control of deaths due to acute respiratory infections: Healthcare workers are trained to recognise signs and symptoms of pneumonia. Co-trimoxazole, an antibiotic used for treatment is being supplied throughout the country to all healthcare units.