

## ASIA

### Vinod K. Paul, Ashok Deorari

Sixty percent of all neonatal deaths and 68% of the world's burden of perinatal deaths occur in Asia.<sup>24</sup> Although there is a wide variation in mortality among countries of Asia, the burden is highest in South Asia, with India alone contributing an estimated 1.2 million newborn deaths each year. Factors contributing to the high mortality rates include widespread LBW, lack of skilled health care at birth (Figure 4), and low levels of exclusive breast-feeding in the initial months of life.

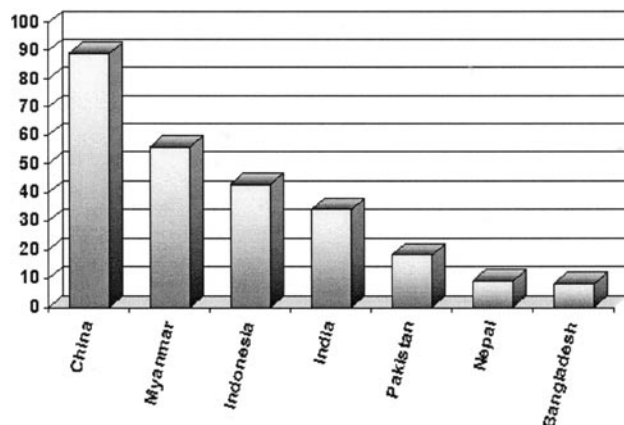
An estimated 11 million children in South Asia are born each year at weights less than 2500 g, accounting for over 50% of all LBW neonates in the world.<sup>25</sup> Intrauterine growth retardation is associated with over two-thirds of infants with LBW. Most births occur at home unattended by trained personnel. In Nepal and Bangladesh, skilled providers attend less than 10% of deliveries (Figure 4).

Priority interventions include presence of a skilled birth attendant for home deliveries, and care of LBW and sick neonates. There is an acute need to consider provision of a village-level mother–infant worker who is competent in midwifery and has skills to look after newborn and older infants.

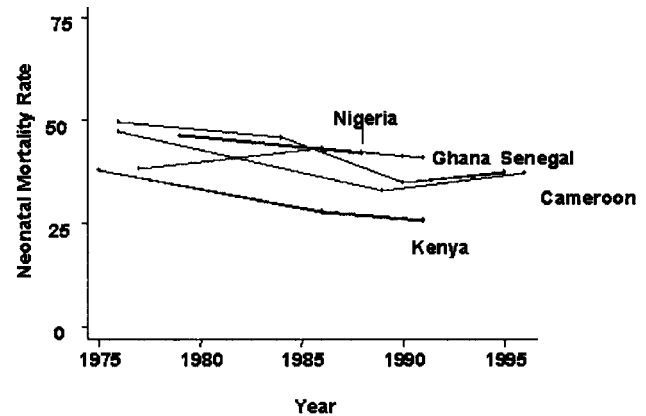
## AFRICA

### Joseph de Graft Johnson, Paul Arthur

In sub-Saharan Africa, more than 50% of all infant deaths occur in the neonatal period, primarily from premature birth, asphyxia, and infectious diseases. Despite implementation of programs to improve



**Figure 4.** Skilled birth attendant at delivery.



**Figure 5.** Trends in neonatal mortality in sub-Saharan Africa.

the health of African mothers and their infants, the rates of neonatal mortality have barely decreased in the last 30 years. In the 1970s, the average neonatal mortality rate was 44/1000, and by the 1990s it had only been reduced to 39/1000 (Figure 5).

Rising rates of maternal malaria and HIV-AIDS infection, continued high rates of syphilis and gonorrhea in women, and poor maternal nutrition have slowed the reduction of mortality. Although the effect of maternal malaria on perinatal and neonatal mortality depends on the rate of transmission, malaria may cause up to 30% of the preventable LBW, and 3–5% of neonatal mortality in high endemic regions.<sup>26</sup> Malaria is also associated with an increased risk of spontaneous abortions and stillbirths. Maternal HIV-AIDS infection also greatly increases the risk for stillbirth, spontaneous abortion, preterm birth, and LBW (see also Table 1).<sup>23,27–41</sup> Syphilis infection in pregnant women, estimated at 10% in sub-Saharan Africa, causes preterm deliveries in approximately 40% of cases, and leads to infection of the majority of infants born to women with secondary-stage infection.<sup>2,42,43</sup>

After birth, sepsis, pneumonia, and meningitis claim a large number of young lives, with the highest global case fatality rates from these diseases in sub-Saharan Africa, ranging from 18% to 59% of all infected children.<sup>44</sup>

Intervention at several points in the life cycle is necessary to reduce perinatal and neonatal mortality. Prior to pregnancy, programs are needed to improve the nutrition of girl children, immunize women against tetanus, prevent sexually transmitted diseases — including HIV-AIDS, and discourage early childbearing. Antenatal interventions include iron folate supplementation, screening for syphilis and anemia; presumptive treatment of malaria in endemic areas; improved antenatal care and birth preparedness, and prevention of MTCT of infectious diseases. Presently, skilled birth attendants conduct less than 50% of all deliveries. Increases are

**Table 3** Infant and Neonatal Mortality in Brazil (1985–1987, 1995–1997)

	Year	Region					
		North	Northeast	Southeast	South	Center west	National
Indirect infant mortality estimate	1985–1987	58.9	90.6	44.6	37.7	40.8	62.4
	1995–1997	36.2	60.5	25.9	22.8	25.8	37.5
% reduction		38.6	33.2	42.1	39.5	36.8	39.8
Percent of neonatal over all infant deaths	1985–1987	40.6	35.1	55.9	51.9	52.4	46.4
	1995–1997	60.1	50.5	65.0	59.2	77.6	59.2
% Increase		48.0	43.9	16.3	14.1	48.1	27.6

needed in the number of skilled community-based attendants and in the quality of their training and supervision. Adequate referral facilities for problem deliveries and ill neonates are needed at all levels and programs to enhance referral compliance by providing transportation, funds, or child care are required. There is also a need to implement essential newborn-care packages, which provide management of asphyxia, breast-feeding counseling, recognition of danger signs, and appropriate community-based services for sick newborns.

## LATIN AMERICA

### Elaine Albernaz, Cesar Victora

The interventions most needed to reduce perinatal and neonatal mortality in this setting are improved antenatal care, including maternal folate supplementation to decrease malformations, and family planning to prevent underage pregnancies and extend birth

spacing to more than 2 years. Increased activities should be targeted to Brazil's most needy communities in the northeast in an attempt to reduce their relatively high early death rate.

Infant mortality has declined in Brazil by more than 30% in the past 15 years, yet during the same period, the proportion of infant deaths that occur in the neonatal period has markedly increased (Table 3). One factor driving this increase is low coverage and quality of antenatal care, with only 66% of women receiving antenatal care beginning in the first trimester. Brazil also has a relatively high rate of adolescent pregnancy (18%), and almost one-third of births are spaced less than 2 years apart. Deaths due to congenital malformations have also remained relatively constant. Another problem vexing Brazil is massive inequality in economic development and service delivery between regions — with the wealthiest communities in the south and southeast and the poorest in the north and northeast. Interestingly, Brazil has a relatively small proportion of children born with LBW (8%).