



IMPROVING MATERNAL HEALTH

Models of care that have reduced maternal mortality and morbidity in Sri Lanka

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ABSTRACT

Sri Lanka, a non-industrialized country with limited resources, has been able to achieve a maternal mortality ratio that is markedly lower than the ratios of similar countries. Many factors have contributed to Sri Lanka's success story. A political commitment to the cause and implementation of clear policies through well-structured and organized community-based and institutional healthcare services—expanded to cover the whole country and provided free of charge—have been the foundation of maternal and child health (MCH) services in the country. The healthcare programs have been well accepted and utilized by the people as the literacy rate is more than 90% for both men and women. Public health midwives form the backbone of MCH services and provide frontline reproductive health care. More than 98% of deliveries occur in hospitals and are attended by midwives. Furthermore, 85% of women in Sri Lanka deliver in facilities served by specialist obstetricians/gynecologists. The Sri Lanka College of Obstetricians and Gynecologists plays a leading role by assisting the Family Health Bureau in making policies and guidelines, training staff, and acting as team leaders for maternity care services. This was evident after the tsunami in December 2004. National maternal mortality reviews, monitoring and evaluation of MCH activities, and relatively high contraceptive prevalence rates have also contributed to the success in Sri Lanka, which could serve as a model for other countries.

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1. Introduction

The risk of a woman dying as a result of pregnancy or childbirth is about 1 in 6 in the poorest parts of the world [1]. The average lifetime risk of dying during pregnancy in South Asia is 1 in 43; in Sri Lanka the risk is 1 in 430—10 times less than the regional figure [2]. The maternal mortality ratio (MMR) has declined from 405 per 100 000 live births in 1955 to 39.3 per 100 000 live births in 2006 [3]. This certainly is a remarkable achievement for a country with a low income and relatively low national spending on health. How this has been achieved could be a model for many more countries with similar backgrounds.

Sri Lanka is an island covering 62 000 km² with a population of 20.4 million inhabitants made up of multiple sociocultural sub-populations; 72.2% of the population live in rural areas. Gross Domestic Product (GDP) per capita was US \$2053 for 2009, with only 1.48% of GDP spent on health. The country has a Human Development Index of 0.658 and a rank of 91, which is well above the regional average [4].

Sri Lanka is successfully on track to achieve Millennium Development Goals (MDGs) 1, 2, 4, 5, and 6, and is making some progress on the rest. With near-universal access to health care and 98% institutional deliveries, the country is on track to meet MDG 5 targeted at improving maternal health [5].

2. Trends in maternal mortality ratio in Sri Lanka

Registration of births and deaths commenced in 1881 and the system improved over the years. Maternal mortality data are available from the 1900s onward. Maternal death has been a notifiable event since 1986. An analysis of the estimates and causes of maternal deaths conducted in 1996 showed a considerable discrepancy in the rates given by different sources [6]. However, with the establishment of Maternal Mortality Review meetings in 1989 the validity of data improved tremendously.

The decline in the MMR has been rapid and sustained, and well documented for over 100 years. The MMR was 2100 per 100 000 in 1881 and by 1930, nearly 50 years later, it was still 2080 per 100 000. The decline possibly started with the establishment of preventive health services and health promotion in the 1920s. The time taken to halve the MMR was 8 years and 3 years in the 1930s and 1940s, respectively. The decline in MMR tailed off over the 1960s, 1970s, and 1980s and has shown only a slow decline during the last decade (Fig. 1) [7].

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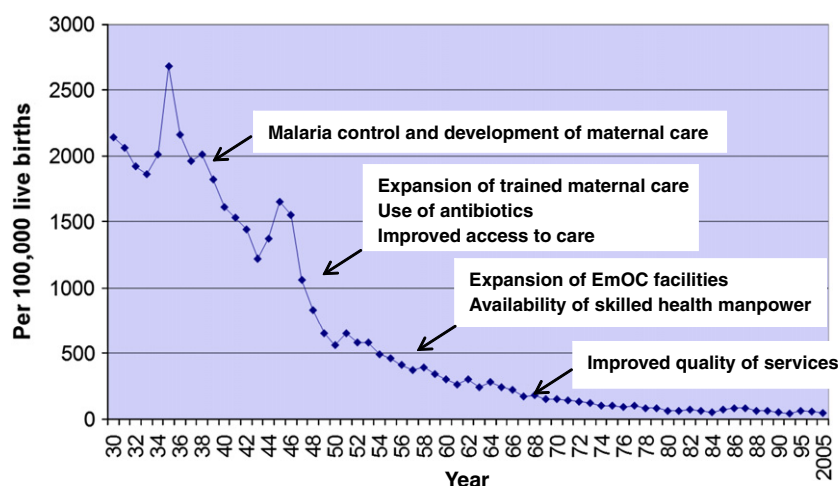


Fig. 1. Maternal mortality ratio in Sri Lanka, 1930–2005.

The peak MMR in 1934 shown in Fig. 1 was due to the major malaria epidemic that affected every third person in the country and killed 80 000 people [8]. The control of malaria and the correction of coexisting anemia possibly resulted in a sweeping reduction in the MMR [9]. Deaths due to hypertensive disease and sepsis—two causes that are associated throughout the world with lack of access to skilled birth attendance—declined dramatically during the 1940s [10]. Thereafter the reduction was due to greater access to maternity care and its utilization, and later the contribution due to the introduction of Comprehensive Emergency Obstetric Care (CEmOC).

3. Factors contributing to successful reduction of the maternal mortality ratio

Long-term state commitment to the provision of public services and the implementation of well-directed policies and strategies have had an impact at differing phases of the decline in maternal mortality [9,11]. Many health- and nonhealth-related factors, along with development of a healthcare system to reach the most remote and rural areas, have contributed to the successful reduction in maternal mortality.

3.1. Health system and delivery of maternity care

One of the earliest landmarks in maternity care services was the establishment of a dedicated maternity “lying-in” hospital—the De Soysa Maternity Hospital in Colombo—in 1897. Health prevention and promotion activities began in an organized way in the form of health units in 1926, and were expanded to cover the entire country by 1952. By 1983 a health unit served a smaller population of about 60 000. Each unit came under the responsibility of a medical officer of health, with assistance from public health nursing sisters, public health inspectors, and public health midwives, and served as a link to the institutional health services [12].

This expansion of field-based services through the health unit system was accompanied by improvement of institutional health facilities [13]. Establishment of a network of institutions—ranging from Teaching Hospitals at the highest level to Rural Hospitals and Maternity Homes at the lowest—contributed remarkably to the decline in the MMR. The number of hospitals with delivery facilities throughout the island has increased from 112 in 1931 to 521 at present, 65 of which provide CEmOC facilities; the rest provide basic delivery facilities with skilled birth attendance [12,14].

Facilities available at institutions were improved with access to specialized services in the higher-level hospitals, which served as referral centers [11]. According to the Demographic and Health Survey 2006–2007, 98% of the births during the preceding 5 years

took place in institutions (84% of which were in hospitals with specialist obstetricians), while 2% of the births were home deliveries [15]. Overall, the rate of skilled birth attendance at delivery was reported as 98%, with a ratio of richest to poorest of 1 for the period 2000–2009 [16]. Fig. 2 illustrates that skilled assistance at delivery had a dramatic impact on reducing the MMR. The partogram was introduced by the Sri Lanka College of Obstetricians and Gynecologists (SLCOG) in 1998, along with training of labor room staff; it is now used countrywide and has improved the quality of intrapartum care and reduced its complications.

Sri Lanka has achieved a rate of availability of Emergency Obstetric Care (EmOC) facilities of 1.7 per 500 000 population, which is above the recommended standard of 1 per 500 000 [17]. The government's policy of providing free health services to the public has enabled everyone to have access to maternity services and institutional care. Although not a constitutional guarantee, a free health service has been one of the strongest factors contributing to the improved reproductive health of women, particularly maternal health [18].

3.2. Prenatal care

The first prenatal clinic was established in Sri Lanka in 1926. Since then the service has been provided by health units and field healthcare providers, led by the medical officer of health, with referrals made to a specialist hospital clinic when indicated. There is also opportunity for mothers to access specialist hospital prenatal clinics directly or access the services of a specialist as a private patient. This ease of accessibility has resulted in most mothers being seen by a specialist before

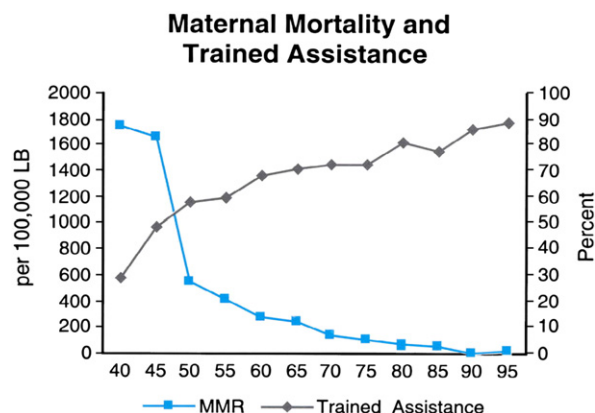


Fig. 2. Maternal mortality ratio and trained assistance at delivery 1945–1995.

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