Regional Elimination of Maternal and Neonatal Tetanus

Technical paper

**Background**

The Forty-second World Health Assembly in 1989 passed a resolution to eliminate neonatal tetanus globally by the year 1995. At that time it was estimated that the disease killed about 800,000 neonates a year, causing 6 to 7 deaths per 1000 live births (LB). By the end of 1999, 57 countries including five countries namely Bangladesh, India, Indonesia, Myanmar and Nepal from the WHO South-East Asia (SEA) Region were still to achieve the target. A renewed initiative was launched by WHO and its partners, UNICEF and the UN Population Fund (UNFPA), in 1999. Under this initiative, elimination of maternal tetanus was added to the target because it is prevented by the same measures targeting neonatal tetanus (NT). Timor-Leste joined this group of nations in 2002 when the country achieved its independence and joined the WHO South-East Asia Region.

Implementation of the Maternal and Neonatal Tetanus (MNT) Elimination Initiative has involved three main strategies:

- Immunization;
- clean deliveries and cord care practices, and
- disease surveillance.

The aim of MNT “elimination” is to bring the number of NT cases down to very low levels, i.e. less than 1 NT case per 1000 LB in every district in every country.

The spores of tetanus are very resistant and remain in the environment even in extreme temperatures for a long period of time. Hence, technically it is not possible
to eradicate tetanus, including NT. However, maternal and neonatal tetanus can be eliminated by reducing the disease incidence to such low levels that it ceases to be a public health problem.

**Regional progress**

All countries in the SEA Region follow the WHO recommendation on vaccinating pregnant women with tetanus toxoid-containing vaccine (TTCV). Over 80% coverage with two or more doses of TTCV in pregnant women (TT2+) has been reported by seven countries for several years (source: WHO/UNICEF Joint Reporting Form). Lower coverage does not necessarily indicate weak programme performance. As women of child-bearing age accumulate repeated vaccine doses during early childhood, multiple pregnancies and during exposure to subsequent supplementary immunization, they become non-eligible for TT vaccination during future pregnancies while still contributing to the target denominator. Various field surveys during validation exercises have indicated a much higher protection at birth than the reported TT2+ coverage suggests.

In 1988, countries of the SEA Region reported around 15,000 NT cases, but this number was estimated to probably only represent about 10% of all occurring cases as the majority of NT cases do not get reported, especially when surveillance is weak, as these babies usually are born and die at home. Neonatal tetanus has frequently been called “the silent killer”. As a result of immunization efforts and improved NT surveillance, often integrated with other vaccine preventable disease (VPD) surveillance, only 656 NT cases were reported in 2014 from four countries – India, Indonesia, Myanmar and Nepal. None exceeded the threshold for MNT elimination.

With the various interventions undertaken, the Member States of Nepal, Bangladesh, Myanmar and Timor-Leste, in that order, reached the elimination goal and were validated by WHO in 2005, 2008, 2010 and 2012 respectively.

Recognizing its high NT burden – based on studies it was estimated between 150,000 to 200,000 cases annually in the late 1970s and early 1980s – India committed itself to achieve MNT elimination through strengthening of routine immunization activities, including TT vaccine coverage, improving clean delivery practices through institutional births, and training of birth attendants. The launch of India’s National Rural Health Mission (NRHM) in 2005 helped strengthen these initiatives. Strategies to improve clean delivery included the innovative Janani Suraksha Yojana, a conditional cash transfer scheme, to encourage women to give birth in a health facility. The interventions to improve TT coverage and reduce MNT mortality under the NRHM included a health systems approach as well as behaviour change communication to increase demand for quality service. Other interventions were:
integrating and extending outreach services through village health and nutrition days including vaccination of children, adolescents and pregnant women with TT vaccines;

- operationalization of sub-centres and community health centres to provide obstetric and neonatal care services 24 hours per day and 7 days per week;

- engagement of more than 900,000 accredited social health activists (ASHA) to generate demand and facilitate use of health-care services by communities and poor women;

- promotion of institutional deliveries focusing on disadvantaged pregnant women including an institutional stay for 48 hours; and

- introduction of the “Dial 108” ambulance tele-system to address the need for emergency transport.

India approached MNT elimination in a phased manner. On 15 April 2015, WHO confirmed that entire India had successfully eliminated maternal and neonatal tetanus. This landmark achievement was the conclusion of an in-depth data review and community-based validation surveys, the last of which was conducted in Nagaland in April 2015, confirming that it had reached the target.

Indonesia likewise pursued MNT elimination validation in a phase manner; with Regions 1 (Java, Bali) and 2 (Sumatera), and Region 3 (Kalimantan, Sulawesi, Nusa Tenggara Timur and Barat) achieving the goal in 2010 and 2011 respectively. The three regions already accounted for 88.7% of the cities or districts of Indonesia and 97.4% of its population. On 19 May 2016 the last region of the country (Maluku, Papua, Papua Barat) achieved validation, following extensive data review and field surveys in Papua, considered the province (3rd administrative level) with the lowest performance figures. The WHO-led assessment team concluded that MNT elimination as a public health problem has been achieved in Papua and as a consequence in Region 4 and, by extension, in Indonesia as a whole.

Indonesia’s success is based on a combination of routine TTCV immunization of pregnant women and "brides-to-be", school-based immunization (BIAS) with DT/Td, targeted supplemental TTCV immunization of all women of childbearing age in areas considered high-risk for neonatal tetanus, as well as clean and safe deliveries.

The May 2016 validation in Indonesia completes achieving the goal of regional MNT elimination.

Following many years of strong routine immunization and quality surveillance systems it could be assumed that Bhutan, the Democratic people’s Republic of Korea, Maldives, Sri Lanka had already achieved MNT elimination before 2000. Validation exercises in Bangladesh, India, Myanmar, Nepal and Timor-Leste in the period of 2003-2012 confirmed their reaching the goal as well. As such all Member States contributed to the SEA Region being the second WHO region to achieve this public health milestone.
The way forward

Equally important to achieving MNT elimination is to ensure that elimination achieved in the recent past is maintained. This requires pregnant women to continue to be immunized against tetanus, the promotion of institutional delivery and appropriate cord care, and that high coverage with TTCV is achieved in infancy and for booster doses as appropriate. Ideally, national immunization schedules are optimized to a life-cycle vaccination approach against tetanus for both genders. Quality NT surveillance to monitor if the elimination status has been maintained and identify areas where MNT is still occurring can help increase access to comprehensive health services as well as help reduce health inequities. In particular, maternal mortality (to which maternal tetanus is estimated to contribute at 5% in developing countries) is an indicator of disparity and inequity for women, and its extent a sign of women’s place in society and their access to social, health and nutrition services and economic opportunities.

Continued promotion of good access to and use of clean delivery practices will contribute to better maternal and neonatal care which is relevant in view of the fact that neonatal mortality has not yet reduced as much as under-5 mortality. Strategies to reduce neonatal deaths must be delivered where births and deaths take place, not only in health facilities but also communities and in the home, i.e. places where the Expanded Programme on Immunization (EPI) often manages to get to while other basic health services still do not.

In this context approaches towards MNT elimination not only target the achievement of a specific elimination status but, more importantly, strengthen access of women to health-care services and subsequently better development opportunities.