

Summary of the Tetanus Vaccines: WHO position paper – February 2017

Background

This position paper replaces the previous 2006 WHO position paper on tetanus toxoid (TT) vaccines. It incorporates recent developments in the field of tetanus prevention and provides revised guidance on the optimal timing of recommended tetanus vaccine booster doses.

Tetanus is an acute infectious disease caused by toxigenic strains of the bacterium *Clostridium tetani* (*C. tetani*). The spores of *C. tetani* are present in the environment irrespective of geographical location; they enter the body through contaminated skin wounds or tissue injuries including puncture wounds. The disease may occur at any age and case-fatality rates are high even where intensive care is available. The majority of reported tetanus cases are birth-associated, occurring in low income countries among insufficiently vaccinated mothers and their newborn infants, following unhygienic deliveries and abortions and poor postnatal hygiene and cord care practices.

TT vaccine was first produced in 1924 and used extensively for the first time among soldiers during World War II. Since then, immunization programmes using TT containing vaccines (TTCVs) have been highly successful in preventing maternal and neonatal tetanus (MNT) as well as injury-associated tetanus.

The disease remains an important public health problem in many parts of the world where immunization programmes are suboptimal, particularly in the least developed districts of low income countries.

WHO Position

The aims of tetanus vaccination are (1) to achieve global elimination of MNT and (2) to ensure lifelong protection against tetanus in all people by attaining and sustaining high coverage of 6 doses (3 primary plus 3 booster doses) of TTCV through routine childhood immunization schedules. All children worldwide should be immunized against tetanus.

WHO recommends a 3-dose primary series, with the first dose of TTCV administered as early as 6 weeks of age. Subsequent doses should be given with a minimum interval of 4 weeks between doses. The third dose of the primary series should ideally be completed by 6 months of age.

WHO recommends that immunization programmes ensure that 3 TTCV booster doses are provided. These should be given at: 12–23 months of age; 4–7 years of age; and 9–15 years of age. Ideally, there should be at least 4 years between booster doses.

Opportunistic catch-up for adolescents and adults could include the delivery of TTCV with other vaccination campaigns such as HPV vaccination for adolescent girls, during voluntary

medical male circumcision services for adolescent and adult males or during routine entry into military services.

Pregnant women and their newborn infants are protected from birth-associated tetanus if the mother received 6 doses (documented by card, immunization registry and/or history) before the time of reproductive age. Vaccination history should be verified in order to determine whether a dose of TTCV is needed in the current pregnancy.

In countries where MNT remains a public health problem, pregnant women for whom reliable information on previous tetanus vaccinations is not available should receive at least 2 doses of TTCV, preferably Td, with an interval of at least 4 weeks between doses and the second dose at least 2 weeks before the birth. To ensure protection for a minimum of 5 years, a third dose should be given at least 6 months later. A fourth and fifth dose should be given at intervals of at least 1 year, or in subsequent pregnancies, in order to ensure lifelong protection.

Pregnant women who have received only 3 doses of TTCV during childhood without booster doses should receive 2 doses of TTCV at the earliest opportunity during pregnancy with a minimal interval of 4 weeks between doses and the second dose at least 2 weeks before giving birth. To provide lifelong protection, a sixth dose would be needed at least 1 year after the fifth dose.

Women who received 4 TTCV doses during childhood or pre-adulthood need only 1 booster dose, which should be given at the first opportunity. To provide lifelong protection, a sixth dose would be needed at least 1 year after the fifth dose.

In countries that have not achieved MNTE status (<1 neonatal tetanus case per 1000 live births in every district), the “high-risk” approach should be part of the elimination strategy. This approach targets all women of reproductive age in high-risk districts and consists of 3 campaign-style vaccination rounds to provide 3 doses of TTCV, irrespective of previous vaccination status, with an interval of at least 4 weeks between doses 1 and 2, and at least 6 months between doses 2 and 3. Ensuring clean delivery and cord care practices are important complementary activities to prevent maternal and neonatal tetanus.