



International Alliance for  
Biological Standardization

*Europe*



## Workshop on Assessing Consequences of Maternal Immunization on Foetal Outcomes

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**Title: Lessons Learned from Maternal Immunization**  
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Maternal immunization strategies have been described as an approach to prevent serious disease in pregnant women and their infants. Maternal immunization with diphtheria toxoid was studied in the early 1950's. Tetanus toxoid vaccine was successfully implemented worldwide for prevention of maternal and neonatal tetanus based on early clinical trials initially conducted in New Guinea in the early 1960's. Although maternal immunization decreased during the later 20th century, the 2009 influenza A pandemic demonstrated increased risks of influenza infection during pregnancy and the benefits of maternal influenza immunization. Influenza maternal immunization has now been approved by many regulatory agencies. Increasing rates of neonatal pertussis resulted in the implementation of maternal immunization with acellular pertussis vaccines beginning in 2012 in many countries. Pregnancy was determined to be a risk factor for severe COVID-19 disease, although clinical trials in pregnancy were delayed. Benefits of COVID-19 vaccine to prevent both maternal and infant disease were subsequently demonstrated.

Studies of maternal immunization have demonstrated safety in pregnant women and infants. The active transfer of vaccine-specific antibodies and the potential decrease in antibody transmission with placental infections has been demonstrated. Good transmission of maternal vaccine-related antibody in high-risk pregnancies and even premature infants has also been described. Decreased antibody production in infants following active immunization has been seen following several maternal vaccines, but subsequent boosting with childhood vaccination appeared to ameliorate this finding. The benefits of maternal immunization today include benefits to maternal and neonatal health and cost-effectiveness when integrated into clinical arms of health care.

