Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) is a global pandemic and mitigation for spread is a global challenge. Though different mechanisms have been put in place to prevent Human Immunodeficiency Virus transmission, for the purpose of this study focus will only be on preventing perinatal transmission. Perinatal transmission of HIV occurs during three stages namely, pregnancy, delivery and after birth. Most of the services geared towards preventing this transmission are only available at the Antenatal clinics and are offered by professional health care workers. Most rural areas of Kenya lack this focused antenatal care services and traditional birth attendants (TBA) deliver most of the babies. In Tharaka South Division where the study was carried out, a section of TBA have been trained on prevention of mother to child transmission (PMTCT) of Human Immunodeficiency virus. In most other areas of the division TBA do not have any formal training on the same. The aim of this study was to establish the impact of training TBA on prevention of mother to child transmission of HIV and AIDS. To meet this goal data was collected from twenty eight trained TBA who formed the experimental group. Similar data was collected from twenty-eight untrained TBA who formed the control group. More data was collected from fifty postpartum mothers and fifteen clinicians working in the health facilities in the division. Data on type of training, knowledge acquired from training, attitudes and practices of the TBA after training was collected. The study found that there was a significant relationship between TBA training and their knowledge on perinatal transmission of HIV before birth ($\chi^2=31.5; \text{df}=1; p<0.05$), during delivery ($\chi^2=32.71 \text{ df}=1; p<0.05$) and after birth ($\chi^2=30.13; \text{df}=1; p<0.05$). The study also found significant relationship between TBA training and their attitude towards measures taken in PMTCT of HIV. This includes attitude towards voluntary counseling testing (VCT) requirements for mothers ($\chi^2=25.92; \text{df}=1; p<0.05$), safe infant formula ($\chi^2=16.84; \text{df}=1; p<0.05$) and cesarean section mode of delivery ($\chi^2=30.86; \text{df}=1; p<0.05$). The study also revealed a significant difference between the practice of the trained and that of the untrained TBA. This was evident in the key areas of PMTCT such as referral of their clients to health facilities ($\chi^2=30.16; \text{df}=1; p<0.05$) and in creating awareness on PMTCT related issues ($\chi^2=25.14; \text{df}=1; p<0.05$). Based on the findings, the study recommended training of all TBA in PMTCT to equip them with the correct knowledge and positive attitudes to enable them practice PMTCT of HIV.