I5: Impact of ZIKV and other arboviruses on blood safety

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Serological assays were implemented over the past 5 decades and proved to be effective for screening out donors who were chronically infected with the classic transfusion-transmitted (TT) infectious diseases (syphilis, HBV, HIV, and HCV). The goal of "closing the window period" led to progressive implementation of minipool (MP) and then individual donation (ID)-NAT screening over the past 15 years. NAT screening has proven highly effective in reducing residual risk for the major TT viruses, particularly in high incidence regions. In addition NAT has proven to be the preferred option for detection of many emerging agents that cause acute infections such as HEV, parvovirus B19, babesia, and multiple TT arboviruses including WNV, DENVs, CHIKV and most recently Zika virus (ZIKV). Such infections are effectively interdicted by NAT whereas serological testing is both ineffective and would detect and result in loss of high rates of donors with resolved infections. This lecture will highlight recent efforts to document the transfusion risks of arboviruses, with particular focus on the impact of the recent global spread of ZIKV and results of recent studies of ZIKV in the US and Brazilian blood supply. The presentation will highlight why ongoing surveillance for and rapid response to EIDs, optimally with sensitive multiplexed NAT assays, is critical to maintain global blood safety.