

Title: Immunologic and Genetic Factors Associated with Influenza Infection and Vaccine Response in Children with Life Threatening and Fatal Influenza (VE)

IRB# 2009-091

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Synopsis:

The Pediatric Acute Lung Injury and Sepsis Investigator's (PALISI) Network, is a consortium of clinical investigators at over 75 ICUs in the US and Canada. In the past 8 months, PALISI investigators have enrolled 127 children (target = 140) across 19 PICUs in an ongoing CDC funded study of genetic susceptibility to life-threatening and fatal influenza in children and young adults. For the proposed study, we will enroll 200 children across 36 US PALISI ICUs representing all US regions. We will obtain informed consent, collect extensive clinical information including vaccination status, risk factors, severity of illness on admission, clinical course, and outcome at hospital discharge. In addition, we will collect and store blood for serum, DNA, RNA and a respiratory aspirate for PCR testing to confirm influenza infection and to subtype the influenza strain. PALISI site investigators will also assist Abt Associates in identifying 2 age-matched community based control subjects for each ICU case and will identify primary health care providers so that Abt can validate the vaccination status of ICU cases. The DNA and serum that we collect will be used for the studies described herein and will also be banked in a core laboratory at Children's Hospital Boston for future studies of genetic susceptibility to life-threatening and fatal influenza infection. The studies outlined above will assist in understanding and defining the immunogenetic mechanisms that underlie variation in vaccine response, which may ultimately aid in interpreting patterns of vaccine effectiveness to suggest potential new vaccine designs.