

Title: Epidemiology and Immune Response to Life Threatening Influenza Infection in Children (R56)

IRB# 2009-092

Principal Investigator: Heidi Flori, MD

Synopsis:

The investigator's primary hypothesis is that the genetic makeup of the host influences the innate immune and inflammatory response to influenza, and underlies risk for more life-threatening illness and mortality. It will be tested by performing a multicenter observational cohort study across an experienced pediatric critical care research network (PALISI). Including the 2009-10 enrollment (R56 AI084011), investigators will prospectively recruit 300 children with respiratory failure from influenza LRTI and characterize their disease severity, clinical course and associate it with their inflammatory and innate immune response to the infection. They will test important cytokines and chemokines in peripheral blood and will assay these same cytokines in endotracheal secretions. They will identify serum biomarkers present on admission associated with illness severity and fatality (Aim 1) and determine the role of innate immunosuppression on mortality (Aim 2).