

# Establishing Medical Need

## Philip LaRussa, MD

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Course Number PB-VI01P: Development of a Vaccine During a Pandemic  
Course Directors: Philip LaRussa, MD and Lawrence Stanberry MD, PhD

# Key Components

- Epidemiology of the Disease:
  - Asymptomatic infection, illness, severe illness, death?
- Target Population for Vaccination:
  - High-risk group(s) vs. General Public?
    - Children??
- Disease Burden:
  - Death vs. hospitalization vs. long term disability?
  - How do you quantify these outcomes?
    - QALYS and DALYS

# Health Economics

- Cost benefit analysis:
  - Direct medical costs of the disease vs. direct medical costs of the immunization intervention
  - Indirect costs of the disease vs. the intervention:
    - Lost economic productivity, school absenteeism.....
  - Eradication vs. Control
    - Eradication: costs are time limited, benefits are not
    - Control: costs are ongoing
  - Zhou et. al. An economic analysis of the universal varicella vaccination program in the United States. *J Infect Dis.* 2008;197 Suppl 2:S156-S164.