

1067-34-1663

Samantha M. Tracht* (samantha.tracht@gmail.com), Knoxville, TN, **Sara Y. Del Valle** (sdelvall@lanl.gov), Los Alamos, NM , and **Brian Edwards** (bke@lanl.gov), Los Alamos, NM. *Economic Analysis of the Use of Facemasks During Pandemic (H1N1) 2009.*

A large-scale pandemic could cause severe health, social, and economic impacts. The recent 2009 H1N1 pandemic confirmed the need for mitigation strategies that are cost-effective and easy to implement. In the early stages of a pandemic, as seen with pandemic (H1N1) 2009, vaccines and antivirals were non-existent or very limited, resulting in the need for non-pharmaceutical strategies to reduce the spread of disease and the economic impact. We construct and analyze a mathematical model for a population with three different age groups and assume that some individuals wear facemasks. We then quantify the impact facemasks have on the spread of pandemic (H1N1) 2009 and examine the cost effectiveness of using facemasks as a mitigation strategy. Our analyses show that an unmitigated pandemic could result in losses of nearly \$836 billion in the United States. Based on present value of future earnings (PV), hospital costs, and lost income estimates due to illness, this study estimates that the use of facemasks by 10%, 25%, and 50% of the population could reduce economic losses by \$479, \$571, and \$573 billion respectively. The results show that facemasks if worn can significantly reduce the number of influenza cases as well as the economic losses due to a pandemic. (Received September 21, 2010)