

Other Models Available

Catastrophe Accumulation Model



Other Services Available

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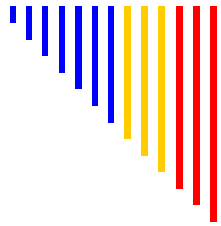
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PRESENTS

PANDEMIC MODEL

EXCESS MORTALITY:
VARIOUS SCENARIOS





Background

- Pandemic flu is a virulent human flu causing serious illness on a global basis.
- The World Health Organization has a 6 phase classification system as a novel flu strain evolves to pandemic status.
- Pandemics often occur in waves and can affect populations over multiple years.

History of Pandemics

- During the 20th century, there were three worldwide pandemics in 1918, 1957 and 1968.
- In the U.S., deaths from these 3 pandemics totaled over 775,000.
- Mortality depends on the infection rate, the virulence of the virus, the underlying health status of the affected population and the effectiveness of vaccines and anti-viral medications.

Characteristics

- Populations have little or no pre-existing immunity.
- Healthy individuals may experience serious complications.
- Vaccines are not available in the early stages of a pandemic.
- Pandemic flu symptoms are more severe and complications more frequent than with annual seasonal flu.

Pandemic and the Insurance Industry

- During a pandemic there are likely to be large life insurance losses due to higher than normal mortality.
- Approximately 50 million people died during the 1918 pandemic and many of these deaths were among otherwise healthy adults.
- Life/health companies manage risks and may emerge better than other businesses.



CSP Pandemic Model Structure

- **Input Variables**
 - Normal Mortality Basis
 - Selected Mortality Table
 - Historical Death Claims
 - High Risk Population by Age
- **Reinsurance Structure**
 - Abnormal Mortality Stop Loss.
 - Reinsurance Attachment Point as a Percent of Normal Mortality.
 - Reinsurance Limit.
 - Standard Cover vs. Reservation.
- **Exposure Data**
 - Group Life Exposure by Age Bracket or by State
- **Model Assumptions**
 - Infection Rate
 - Mortality Rate
 - High Risk Mortality
 - Non-High Risk Mortality
 - Shape of Mortality Curve
 - Traditional Flu Mortality (U shape)
 - Flat Mortality
 - 1918 Flu Mortality (W Shape)
 - Cytokine Storm
- **Scenarios**
 - Mild Pandemic (1968 Hong Kong Flu)
 - Moderate Pandemic (1957 Asian Flu)
 - Severe Pandemic (1918 Spanish Flu)
 - Center for Disease Control Fluaid Model
 - Historical Influenza Mortality (1917-1994)
- **Output**
 - Exposure and Normal expected mortality
 - Distribution of excess claims based on:
 - Variable infection rate
 - Multiple Scenarios
 - Reinsurance recovery from Abnormal Mortality Stop Loss