



SOCIETY OF ACTUARIES

**A World of Mortality Issues and Insights Seminar
May 23, 2012**

**Session 6 – What Have We Learned from
Pandemics and What Does the Future Hold?**

Presenter

Mika Makinen, FASF (IAA MWG)



FINNISH MUTUAL INSURANCE COMPANY
FOR PHARMACEUTICAL INJURY INDEMNITIES

What have we learned from Pandemics and what does the future hold?

A World of Mortality Issues and Insights
23 May 2012, Los Angeles

Mika Mäkinen



FINNISH MUTUAL INSURANCE COMPANY
FOR PHARMACEUTICAL INJURY INDEMNITIES

Pandemic Mortality

- Definition (...one of those):
 - Caused by earlier unknown source (virus)
 - Cause serious illness
 - Spread easily
- Worldwide





History of Pandemics...

- 41 B.C. – earliest description by Titus Livius of Rome
- 1379 'mysterious influence of the heavens'
- 1510, 1580, 1732, 1761, 1781, 1830, 1847
- 1889-1891 Russian Fever
- 1918-1919 Spanish Flu
- 1957 Asian flu
- 1968 Hong Kong flu
- 2009 'Swine flu' A(H1N1)2009



Pandemic - World has changed during decades

- Population growth
 - Population density
 - Social inequality
- Spread speed
- Capability to make medicines





Pandemic – effects to insurance companies

- Insurance risks
 - Mortality rates
 - Reinsurance, risk transfer
 - Short-term effect
- Investment risks
- Operative risks
- Long-term effects



Current situation of pandemics

- Who's Influenza Pandemic metric
 - Spring 2009 Pandemic Period started
 - 10.8.2010 Post-Pandemic period started
- Can there be time when there is no risk of any outbreak?





What we have learned from A(H1N1)2009?

- Spread very fast
- Milder than first news expected
- Medicines took about 6 months to made mass use



Experience from use of vaccines

- Before AH1N1(2009) common belief was that medicines mass production will take half year after viruses dna is known
- Everything went like planned, it took about half year to get vaccine to mass production but...





Experience from use of vaccines

- ...time to make vaccine was short and there was not so much to test vaccine.
- Pandemrix vaccine has caused some problems in some countries
 - Narcolepsy



Potential future pandemics...

When, Where to start, What kind of...

...No answers...





Potential future pandemics...

...BUT it is very probable that

- Next pandemic will be caused by animal virus
- It will start from the areas, where population density is high and where people live near home animals
- It will hit harder to those areas where standard of living is lower

