



The Actuarial Profession

making financial sense of the future

B8 - Will My Reinsurer Be There When I Need Them Most?

Life Convention 2009

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Will My Reinsurer Be There When I Need Them Most?

Subtitle:

...Risk exposures of a reinsured life portfolio in the event of a pandemic...

Agenda

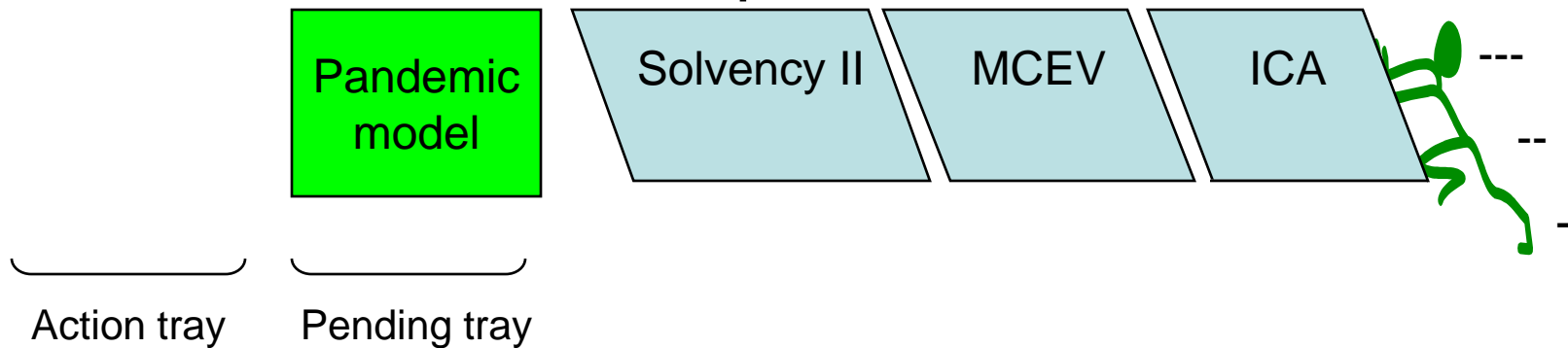
- Pandemic models
- Working through and surviving a pandemic
- Latest pandemic update

Pandemic models – a necessary evil?

- “Drag factors” for an pandemic model:
 - a) Already been done
 - b) Rating agencies cover it
 - c) Difficulty in getting data
 - d) Model reliability will be low
 - e) A broad brush, prudent approach is okay
 - f) Other priorities / business profile

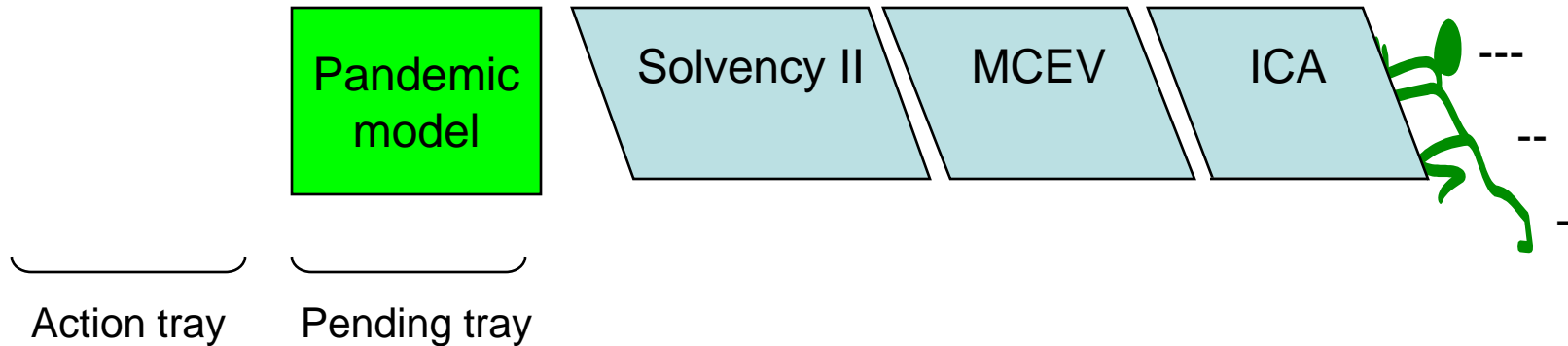
Pandemic models – a necessary evil?

- “Push factors” for a pandemic model:

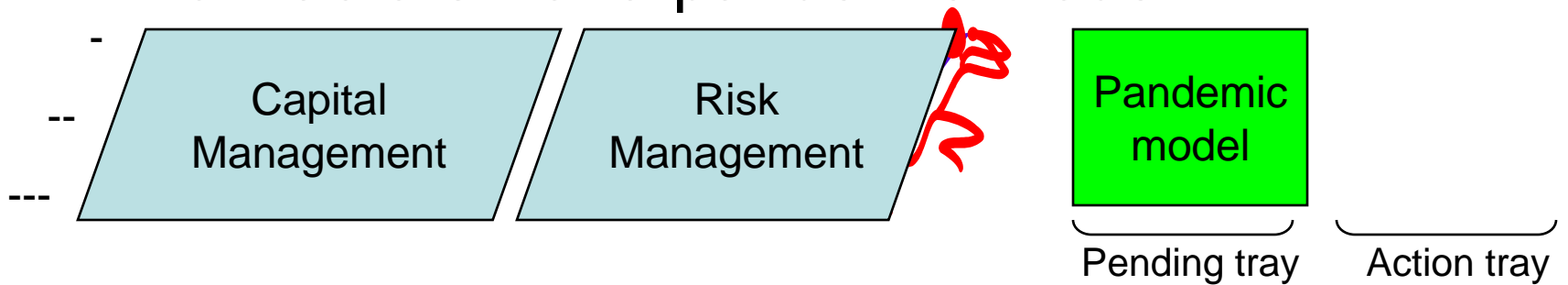


Pandemic models – a necessary evil?

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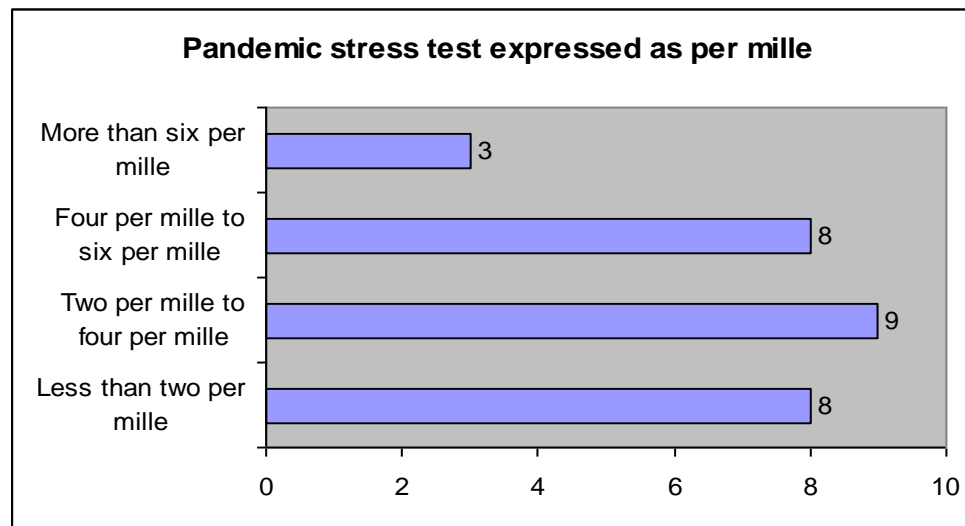


- “Pull factors” for a pandemic model:



Pandemic models – a necessary evil?

- KPMG Technical Practices Survey of December 2008 – Pandemic stress test in the ICA (2007):
 - 33 out of 39 make some allowance
 - 5 apply a % to a mortality table (average 190% for one year)
 - Remainder...



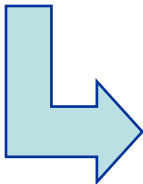
Pandemic models – a necessary evil?

- Model evolution...

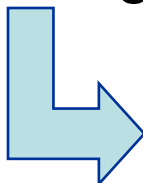
1. Miscellaneous contingency loading



2. Single broad frequency / severity for ICA



3. Frequency v. severity model covering a range of outcomes



4. Add reinsurer uncertainty

Reinsurers

- What causes reinsurer default?
- What questions should you be asking?
- How do you use the answers?

Reinsurer default

- Poor corporate governance
- Insufficient capital
- Asset problems, e.g. liquidity, market movements
- Extreme events, e.g. 1-200 year events
- Credit spirals, e.g. debtors (i.e. reinsurance recoverables) fail

What questions should you be asking?

Corporate Governance

- Risk control structure:
 - is this at board level or simply an audit responsibility?
- Risk appetite:
 - Is this explicitly defined?
- Risk identification, measurement, monitoring:
 - Mechanisms for monitoring
 - Accumulation control
 - Review procedures

What questions should you be asking?

Capital adequacy

- Capital resources, in the event of a pandemic:
 - In direct counterparty
 - In wider reinsurance group, e.g. fungibility of this capital in particular under the pandemic scenario
 - Ability to raise further capital
 - Development of capital over time
- Regulatory environment
 - Capital requirements
 - Stress Tests
- What level of pandemic can you withstand?

What questions should you be asking?

Assets

- Liquidity
 - Cash or cash equivalents, e.g. breakdown of maturities by duration;
 - Matching by currency;
- Market risks: volatility of asset values
 - Proportion invested in real assets
- Credit risks
 - Credit quality
 - Concentration exposures

What questions should you be asking?

Extreme Events

- Diversification
 - By business line
 - P&C vs L&H
 - Mortality vs Longevity
 - By geography
- Correlation

What questions should you be asking?

Extreme Events: Correlation?

- Employers' Liability: if illness contracted at work, or if workers are not given anti-virals and decide to sue;
- Travel insurance: reclaim cost of holidays;
- Property damage e.g. fires not contained by firemen;
- Marine / Aviation liability: if a virus is brought into a country by sea / air;
- Business interruption e.g. financial losses, or decontamination of buildings after an event.

Source: Lloyds London: Pandemic Seminar June 2008

What questions should you be asking?

Credit Spirals

- Use of retrocession:
 - Overall % of reserves
 - Single party counterparty exposures
 - Credit quality of retrocessionaires

What questions should you be asking?

Credit Spirals

-finally, don't forget specific treaty terms
 - Downgrade triggers;
 - Posting of collateral;
 - Recapture provisions;
- Also, what terms have they offered to your competitors?

APRA Stress Test (excerpt only)

Scenario	Moderate	Extreme
Direct Pandemic Assumptions		
Overall infection rate	20%	30%
Mortality rate	0.5%	2.0%
Average duration	2 weeks	4 weeks
Duration of pandemic	12 months	12 months
% business closed	20%	30%
Economic Assumptions		
10 year bond rate	- 10 bp, one year	- 50 bp, one year
Equity prices	- 5%, one year	- 15%, one year
Reinsurance Assumptions		
Reinsurance recoveries	100%	75%

Pandemic models – a necessary evil?

- Using these answers – stage 1

	Risk Control	Capital	Financial	Diversification		
Reinsurer	Structure	Fungibility	Strength	P&C	L&H	...
A	10	Good	XX	Good	Poor	
B	8	Medium	Y	Medium	Medium	
C	6	Poor	X+	Poor	Good	
D	9	Medium	Z-	Medium	Medium	
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Pandemic models – a necessary evil?

- Using these answers – stage 2

Reinsurer		Pandemic severity per mille insured population						
		0.5	1	1.5	2	2.5	...	5
A	Default probability %			0	0			5
	Recovery rates %			100	100			95
B	Default probability %			0	0	5		
	Recovery rates %			100	100	100		
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- Anchor points very important
- Less information, greater prudence – reinsurer undervalued
- Greater uncertainty as move to right

Pandemic models – a necessary evil?



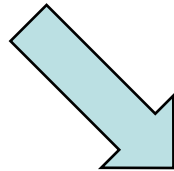
Company
pandemic
model

Frequencies

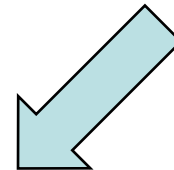


Severities

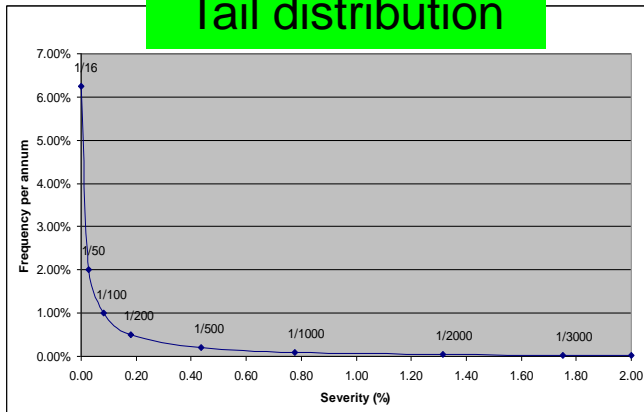
Reinsurer default / recovery rates



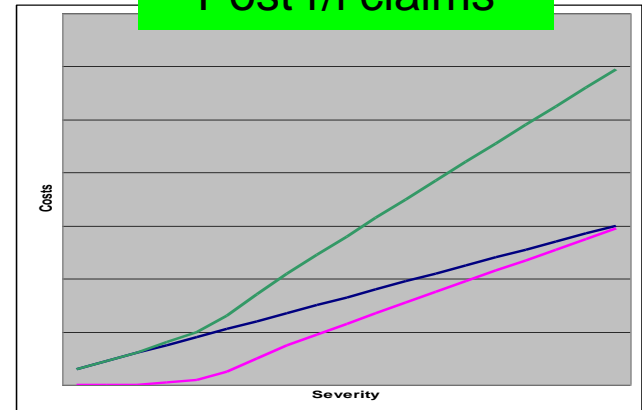
Pandemic
Claims
coverage



Tail distribution



Post r/i claims



Pandemic models – a necessary evil?

- Outputs to help set:
 - Appetite
 - Pricing
 - Reinsurance

Pandemic models – a necessary evil?

- Pandemic models – a necessary evil?
 - ...Likely already doing it
 - ...Reasons here why might make sense to progress down the evolutionary scale
 - ...At least a useful additional risk management tool

Working through and surviving a pandemic

As a direct writer of reinsured life business key areas to worry about in the event of a pandemic include:

- Suitable new business pricing and reserving levels
- Paying claims – liquidity, support of reinsurer
- Availability of staff, systems, TPAs

Working through and surviving a pandemic

- Survey carried out in September 2009 to establish current thinking and readiness.
- Results...

Life Insurance Market Survey

Scenario:

the current reported **fatality rate** in the UK is around **0.4%**. By fatality rate we are referring to the percentage of infected people dying.

Please provide responses to the following questions under each of the three scenarios: coupled with an increase in the population infection rate: if the fatality rate due to the pandemic were to materially increase to: **0.8%, 1.5% or 2%**, which was the case in the 1918-19 Spanish flu pandemic.

Pandemic Update from our Regulator (1)

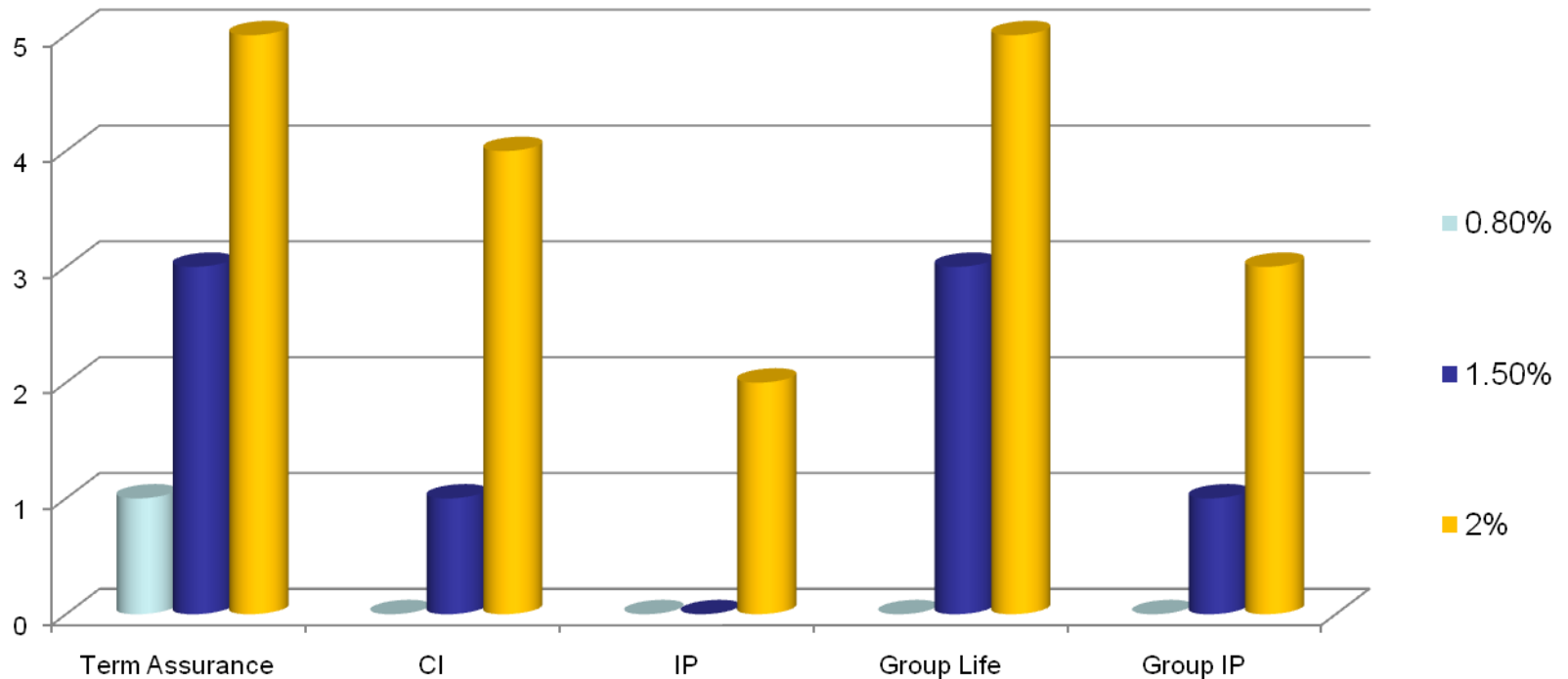
- Richard Maddison – Deputy Head of Business Continuity Risk, FSA
 - FSA did a pandemic simulation exercise for 6 weeks (simulating 22 weeks of a pandemic) with 70 companies. They simulated staff absence of 50%.
 - In week 3:
 - People in the UK start to die.
 - Schools close.
 - Fuel and food shortages
 - Lack of trains
 - Absence of call centre staff
 - In week 4:
 - 57,000 people in UK have died.
 - 49% of the workforce are absent.
 - Hospitals are overwhelmed.
 - FSA reduces operating hours
 - Health & Safety closes some offices
 - Home working worked fine, but broke down after a few months.
 - In week 5:
 - FSA delays regulatory / statutory submissions
- Source: Lloyds London: Pandemic Seminar June 2008

Pandemic Update from our Regulator (2)

- The main learning points have been:
 - How are decisions made if the top 3 layers of management is unavailable?
 - If your suppliers fail, then you have a problem
 - Staff absence is mainly due to fear
 - Staff retention after the pandemic is a problem. Some staff are disgruntled at being treated badly and leave. Good staff are head-hunted due to an increased demand.
 - Credit card companies have investigated the legality of using cards beyond their expiry date if they don't have the staff to issue new cards.
 - For insurance claims, can claims be paid into the bank account from where the premiums were taken?
 - EDF wanted to do 3 hour power cuts during the day, but Crest's workers were working from home and laptop batteries couldn't last 3 hours.

Source: Lloyds London: Pandemic Seminar June 2008

Insurance Aspects: Withdrawal



Insurance Aspects: Other

- 19. Would you consider informally withdrawing? 11
 - 20. using moratoria or exclusion clauses? 7
 - 21. changes to underwriting philosophy? 11
 - 22. reconsider pricing? 12
 - 23. reconsider reserving bases? 13
-
- "Whether a company withdraws or not is likely to be immaterial compared with the exposure already written."

Operational Aspects: BCP

- 32. Does your BCP deal specifically with the pandemic? **12**
- 33. is it triggered by the occurrence of a particular event or events? **8**
- "Question 33 triggers are related to WHO Pandemic classifications for the UK."

Operational aspects: Capacity

	Underwriters	Claims	Admin
BCP	8	6	10
Unchanged	7	8	6
Reduced 25%	4	2	5
Reduced 50%	3	4	3

Operational Aspects: UW

“Would look for more ways to reduce reliance on GPRs”

“From a ceding co point of view, exposure is similar on cases below limits too, so unlikely to differentiate like this.”

“It's likely that cases would have to be postponed rather than declined.”

“We would consider tightening underwriting”

Contingency Plan with Reinsurers?

2

Operational Aspects: Claims

“Would amend processes to allow for any mandated restrictions, such as on travel, but intend to retain the integrity of normal approaches. Overriding principle would be to treat customers fairly, and in the manner they would expect. “

“Subject to size of case, etc, we may well introduce streamlining for a period. “

“We would consider changes, following discussions with reinsurers.”

Contingency Plan with Reinsurers?

3

Operational Aspects: Admin

- Would these teams be in a position to update policyholder details? **9**
- Would these teams be in a position to receive claims notifications and settle claims? **9**
- Would these teams be in a position to pay reinsurance premiums and receive recoveries? **10**

Regulatory Aspects

What are your concerns from a regulatory perspective? Some potential implications might be:

- changes to IBNR reserving run offs (due to possible longer delays in claims notification and processing); or
- whether the FSA may grant waivers to the stress tests for ICA and statutory valuation purposes; or
- impact your approach to premium reviews and Treating Customers Fairly?

Regulatory Aspects

“Potentially enhanced capital requirements and prescriptive actions from FSA”

“The FSA may require increased capital (for such reasons above) at a time when capital is likely to be strained and yet the a pandemic is a one-off (or at least a non-annual) event.”

In Conclusion

- Will my reinsurer be there when I need them most?

...**You** need to ask

...**But** be sure you will be around too!

Latest Pandemic Update @ 12/10/09

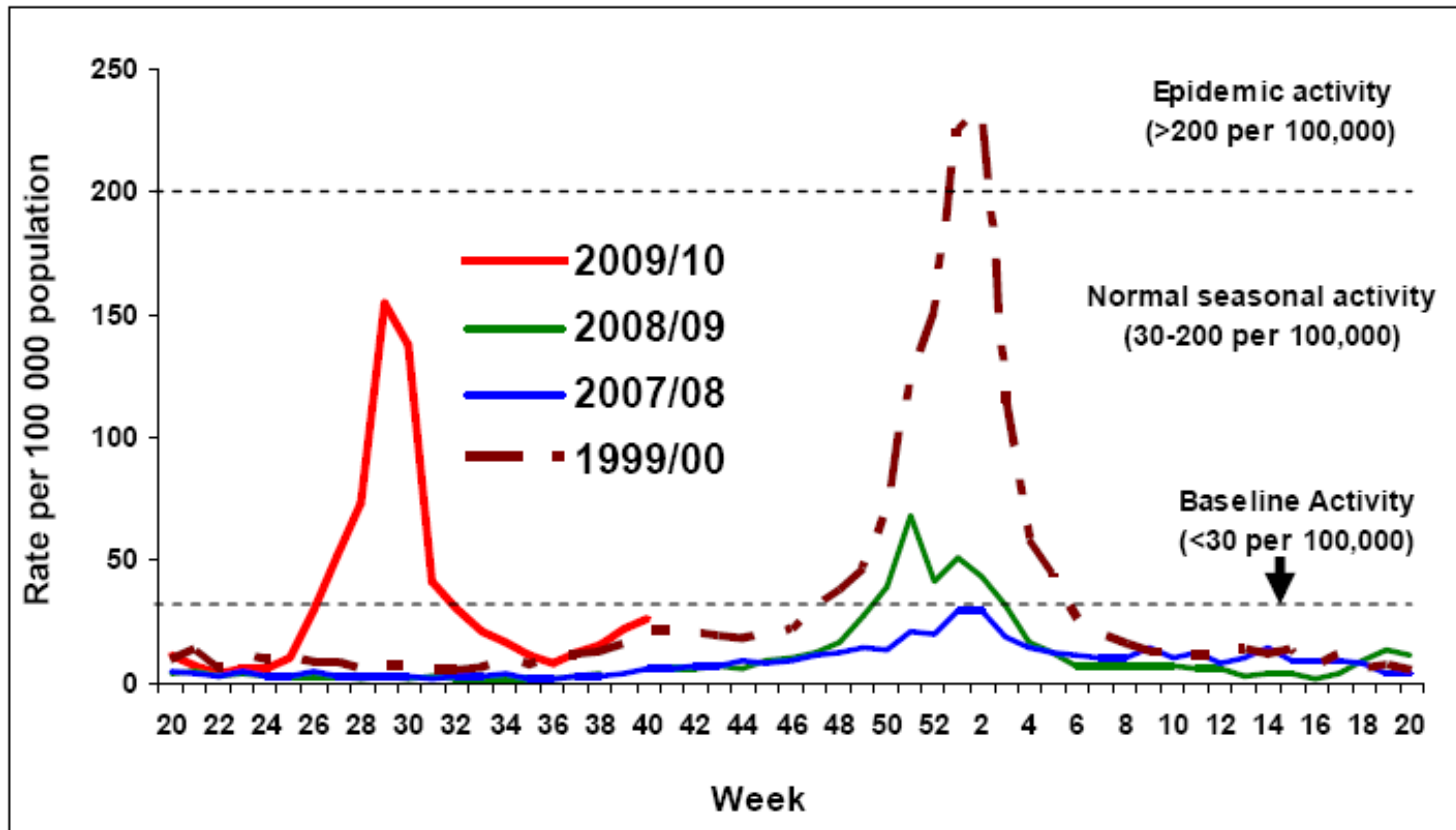
Latest Pandemic Update @ 15/7/2009

- WHO pandemic alert remains at level 6
- US Centres of Disease Control and Prevention (CDC) Pandemic Severity Index @ category 2 but likely to fall
- Activity increasing in northern hemisphere
- Current swine flu hospitalisations in England: 290 patients (286)
- Cumulative Deaths – The provisional number of deaths related to swine flu is 76 in England (72) – 4525 recorded worldwide

Sources: Health Protection Agency; QSurveillance GP survey; European and US Centres for Disease Control.

Latest Pandemic Update @ 15/7/2009

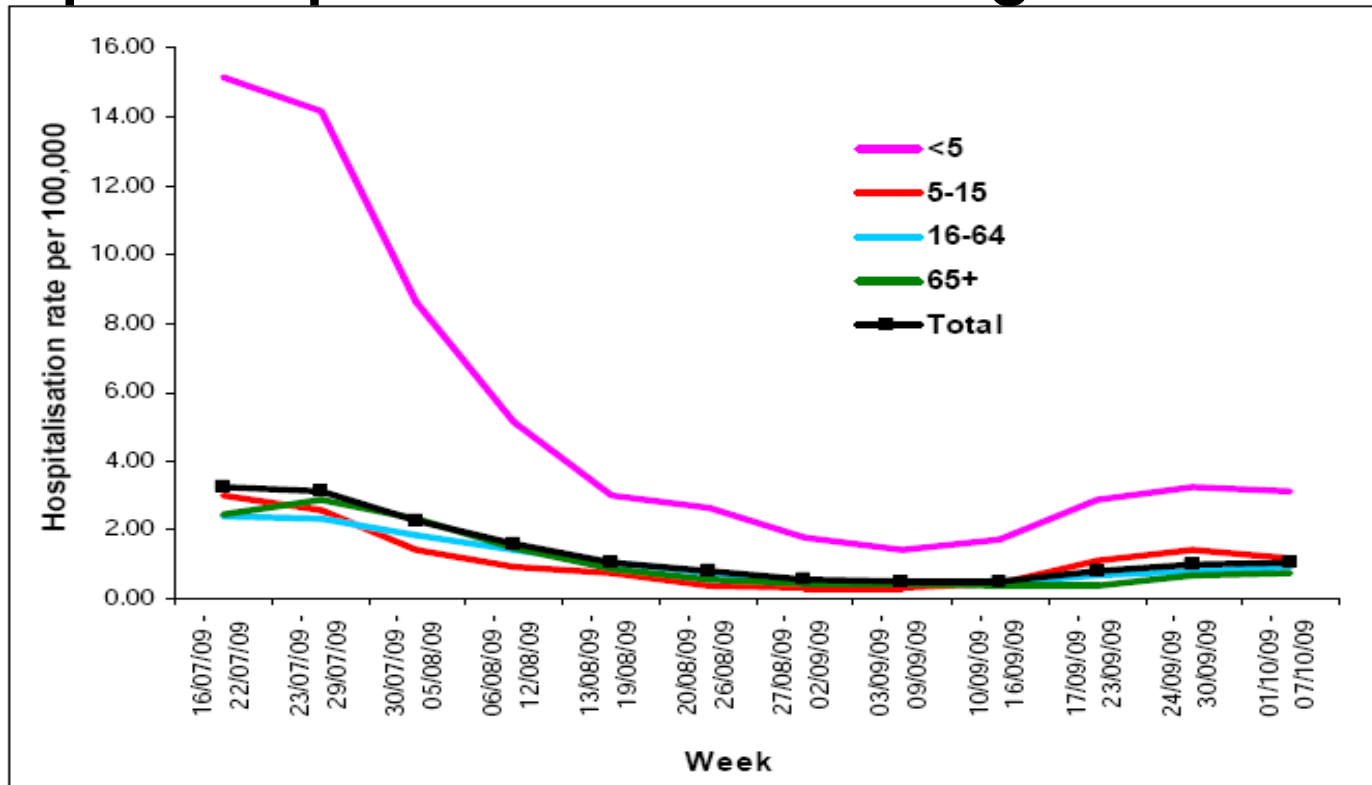
Current estimated weekly Royal College of General Practitioners consultation rates of flu-like illness



Sources: Health Protection Agency; QSurveillance GP survey; European and US Centres for Disease Control.

Latest Pandemic Update @ 15/7/2009

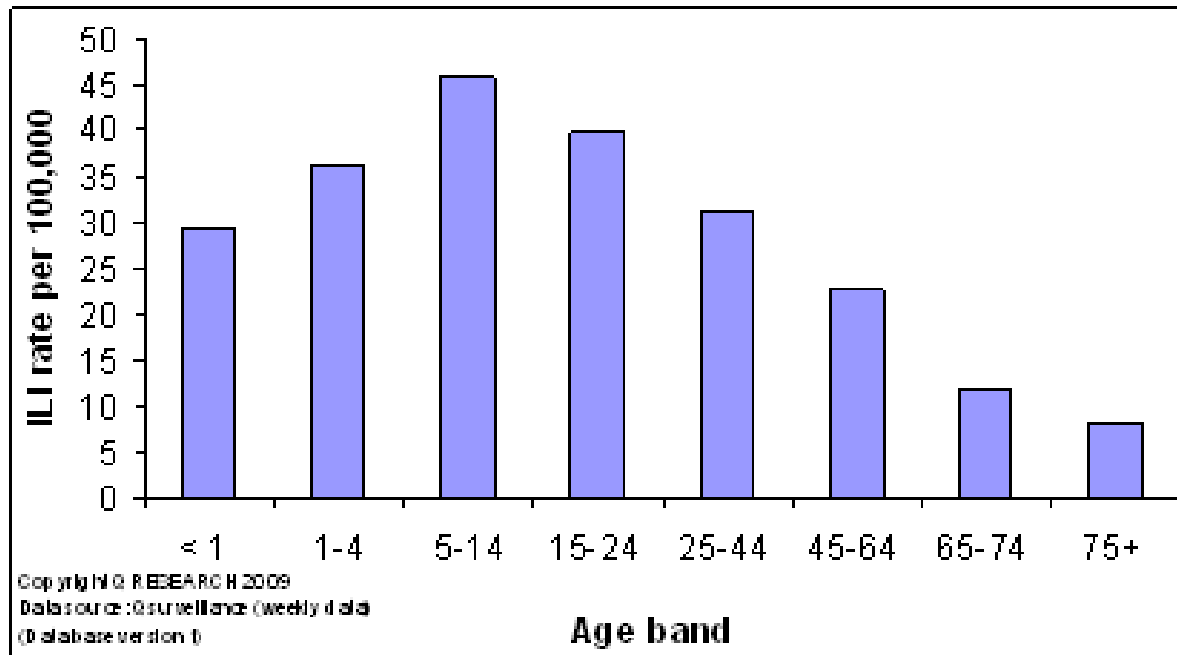
Weekly rates (per 100,000) of new admissions to hospital with suspected pandemic 'flu in all English NHS trusts.



Sources: Health Protection Agency; QSurveillance GP survey; European and US Centres for Disease Control.

Latest Pandemic Update @ 15/7/2009

QSurveillance influenza-like illness rate by age band in week 40 (ending 4 October)



Sources: Health Protection Agency; QSurveillance GP survey; European and US Centres for Disease Control.

Questions

