Bird 'Flu and Business Continuity

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Threats to Business and Society

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2.
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1. Computer-based risks: 6.0
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Source: Swiss Re Corporate Risk Survey 2005: “How concerned are you about various risks affecting your company?” (0–10)
A Pandemic Occurs When ...

when a novel influenza strain emerges with the following characteristics:

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1. it is readily H2H (infectious between humans),
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3. it is highly virulent.

So far we have 2. and 3. We await H2H.

Each pandemic is unique, but we only have historical data to go on.
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On average: three every century. Pandemics in 1890, 1918 (Spanish 'flu), 1957 (Asian 'flu), 1968 (Hong Kong 'flu).
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➢ **Zoonotic diseases:** (from other species)

<table>
<thead>
<tr>
<th>China’s populations (in millions):</th>
<th>1968</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pigs</td>
<td>5.2</td>
<td>508</td>
</tr>
<tr>
<td>Chickens</td>
<td>12.3</td>
<td>13,000</td>
</tr>
<tr>
<td>People</td>
<td>790</td>
<td>1,300</td>
</tr>
</tbody>
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Source: Cooper & Coxe (2005)
In the 1918 pandemic:
In 1918 at least 20 mn people died. (McF. Burnett believed up to 200 mn deaths.)

Today’s equivalent: between 180 and 360 mn. AIDS has killed 24 mn, and 40 mn are HIV+ (Barry 2005).
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- In 1918 adults under 40 were disproportionately killed because of auto-immune (cytokine) responses (Cooper & Coxe 2005).

- Unlike earlier pandemic strains (1918 was H1, 1957 H2, and 1968 H3), the current ‘flu virus is A(H5N1) — each pandemic is unique.
Economic Costs:
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  (= 2% of world GDP)
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- The SARS outbreak in 2003 estimated to have cost about 0.6% (USD$18 bn) of affected countries’ GDPs (Bloom et al. 2005).
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Current Avian 'Flu: A H5N1

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➢ Case fatality rate in humans of 59% (of only 258 confirmed cases). (WHO)

(SARS: 8096 cases, 774 deaths: c.f.r. 9.6%)
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∴ We should plan for the possibility of an Avian ’Flu Pandemic (AFP).
Best Estimates for Australia
— based on previous ’flu pandemics:
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➢ Over three waves of infection: 14 mn people clinically infected.
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➢ Leading to between 1 mn and 1.8 mn extra GP consultations, and
➢ between 5,900 and 40,300 extra hospitalisations, and
➢ between 1,300 and 7,100 extra deaths.

See breakdown of age, risk status, and health-care workers in Table 2, below.
Uncertainties ..

But these estimates, based on CDC estimates, might be underestimates.

There is considerable *epidemiological uncertainty* about how many people will be infected and the severity of the disease, and *economic uncertainty* about how an outbreak will affect economic activity.
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Affected by:

- public health measures, private hygiene,
- the responses of businesses,
- the responses of people, and the extent to which people panic.
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- Ordinary influenza infects between roughly 5% and 20% of the population each year.
- It has a case fatality rate of about 0.1%.
- It affects the at-risk old and young disproportionately.
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Usually, to limit the impact of sudden failure of critical infrastructure from a terrorist act or a natural disaster:
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And a BCP is the best way to reduce the impact of an AFP on the firm or organization. (But don’t ignore external impacts on suppliers, services, and clients, as some do.)

An AFP: high impact, low probability.
Attitudes Towards BCP for AFP

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But 60% either do not believe that AFP will affect their firm or undecided; 40% believe it will have an adverse impact on their firm.
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But 60% either do not believe that AFP will affect their firm or undecided; 40% believe it will have an adverse impact on their firm.

Moreover, 57% either believe that their firm is not very concerned about AFP or undecided; 43% say their firm is very concerned.
Attitudes ...

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33% say no-one is in charge of their AFP BCP; 29% don’t know or didn’t respond; 38% say there is a AFP leader (HR, medical, OH&S, etc).
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Reasons: AFP hype, ignorance about BCP, firm too decentralised, other business disruptions.
A Framework for BCP:

- Clients, Customers
- Utilities, Services
- Organisation
- Employees
- Suppliers
External and Internal Disruption to a Firm or Organisation — Three Vulnerabilities.

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- **Energy/Utilities**: electricity, motor fuel, gas, water, sewerage, waste disposal/recycling.
- **Services**: banking, auditing, insurance, security, legals, telecoms, travel, maintenance, police, fire, catering, cleaning, consultants, advisors.
- **Capital Markets**: equity or debt.
Three Vulnerabilities ...

2. **External Demands (the demand side):** from clients and customers, who buy the firm’s outputs.
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   Disruption of means to conduct business (e.g. IT), as well as supplies and demand.

   An Avian ‘Flu Pandemic (AFP) affects not only the externals, but also the internals — geographical spread is no insurance against an AFP.
Look Within, Not Outside

There are two broad approaches:

1.
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1. Try to plan for all possible threats.
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There are two broad approaches:

1. Try to plan for all possible threats. But this is endless.

2. 
Look Within, Not Outside

There are two broad approaches:

1. Try to plan for all possible threats.
   But this is endless.

2. Better to look within the firm/organisation and ask: what do we do, and what do we want to keep doing?
   How?
Continuity of Core Activities.

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1. Triage: Rank the organisation’s activities as: essential (core); desirable; or postponable. (Bear in mind possible changes to client demands during the event.)

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5. Group and rank these actions, and decide which to undertake now.
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- market risk analysis: volatility, disruptions
BCP: 2. Major Operations Disruption

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➤ core activities? basic minimum resources?

➤ key employees and supplies? scenario analysis and length and timing of disruption
➤ understudy teams for critical functions
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➤ What must be done in the office?
   What could be done at home?
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What could be done at home?
➤ establish remote and redundant mirroring facilities of centralised activities:
➤ understudy teams for critical functions
➤ What must be done in the office?
  What could be done at home?
➤ establish remote and redundant mirroring facilities of centralised activities:
  — avoid public transport
  —
➤ understudy teams for critical functions
➤ What must be done in the office? What could be done at home?
➤ establish remote and redundant mirroring facilities of centralised activities:
  — avoid public transport
  — avoid disruption of remote location
- understudy teams for critical functions
- What must be done in the office?
  What could be done at home?
- establish remote and redundant mirroring
  facilities of centralised activities:
  — avoid public transport
  — avoid disruption of remote location
  — do remote staff commute? move with families?
➤ understudy teams for critical functions
➤ What must be done in the office?
   What could be done at home?
➤ establish remote and redundant mirroring facilities of centralised activities:
   — avoid public transport
   — avoid disruption of remote location
   — do remote staff commute? move with families?
   — regularly test equipment and procedures of remote facilities
understudy teams for critical functions

What must be done in the office?
What could be done at home?

establish remote and redundant mirroring facilities of centralised activities:
  — avoid public transport
  — avoid disruption of remote location
  — do remote staff commute? move with families?
  — regularly test equipment and procedures of remote facilities

expand IT and telecomms capacities — budget? security? bandwidth? remote access to key data?
➢ For work at home:
For work at home:
— enough staff resources — computer, programs, licences, data, broadband?
For work at home:
— enough staff resources — computer, programs, licences, data, broadband?
— synchronous v. asynchronous work?
For work at home:
- enough staff resources — computer, programs, licences, data, broadband?
- synchronous v. asynchronous work?
- several shifts?
-
For work at home:
- enough staff resources — computer, programs, licences, data, broadband?
- synchronous v. asynchronous work?
- several shifts?
- supervising remote computing — quality and risk control? backups?
For work at home:
- enough staff resources — computer, programs, licences, data, broadband?
- synchronous v. asynchronous work?
- several shifts?
- supervising remote computing — quality and risk control? backups?

stockpiling key supplies
For work at home:
- enough staff resources — computer, programs, licences, data, broadband?
- synchronous v. asynchronous work?
- several shifts?
- supervising remote computing — quality and risk control? backups?

stockpiling key supplies

disruptions to key service providers?
—for work at home:
  — enough staff resources — computer, programs, licences, data, broadband?
  — synchronous v. asynchronous work?
  — several shifts?
  — supervising remote computing — quality and risk control? backups?

➤ stockpiling key supplies
➤ disruptions to key service providers?
➤ electronic payments from customers? to employees? to suppliers?
For work at home:

— enough staff resources — computer, programs, licences, data, broadband?
— synchronous v. asynchronous work?
— several shifts?
— supervising remote computing — quality and risk control? backups?

(stockpiling key supplies)

(disruptions to key service providers?)

(electronic payments from customers? to employees? to suppliers?)

(notifying customers and suppliers of any changes?)
BCP: 3. Recovery Objectives
BCP: 3. Recovery Objectives

➢ identify minimum critical activities and necessary staff level
**BCP: 3. Recovery Objectives**

- identify minimum critical activities and necessary staff level
- identify activities feasible remotely
BCP: 3. Recovery Objectives

➢ identify minimum critical activities and necessary staff level
➢ identify activities feasible remotely
➢ establish “dark” remote facilities?
BCP: 3. Recovery Objectives

➢ identify minimum critical activities and necessary staff level
➢ identify activities feasible remotely
➢ establish “dark” remote facilities?
➢ coordination with joint producers, joint venturers, complement producers.
BCP: 4. Communication
BCP: 4. Communication

➤ with staff — prevent panic, strengthen morale, ensure health protected and critical functions continue
BCP: 4. Communication

➢ with staff — prevent panic, strengthen morale, ensure health protected and critical functions continue
➢ start now, beforehand, to establish credibility
BCP: 4. Communication

➢ with staff — prevent panic, strengthen morale, ensure health protected and critical functions continue
➢ start now, beforehand, to establish credibility
➢ details of mobiles (texting), sat phones, landlines, emailing — of staff, suppliers, key customers
BCP: 4. Communication

➢ with staff — prevent panic, strengthen morale, ensure health protected and critical functions continue
➢ start now, beforehand, to establish credibility
➢ details of mobiles (texting), sat phones, landlines, emailing — of staff, suppliers, key customers
➢ establish hotlines and websites
➢
BCP: 4. Communication

➤ with staff — prevent panic, strengthen morale, ensure health protected and critical functions continue

➤ start now, beforehand, to establish credibility

➤ details of mobiles (texting), sat phones, landlines, emailing — of staff, suppliers, key customers

➤ establish hotlines and websites

➤ inform staff about the BCP, triggers, monitoring preparations
BCP: 4. Communication

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➢ details of mobiles (texting), sat phones, landlines, emailing — of staff, suppliers, key customers
➢ establish hotlines and websites
➢ inform staff about the BCP, triggers, monitoring preparations
➢ how do others get information?
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➤ with staff — prevent panic, strengthen morale, ensure health protected and critical functions continue
➤ start now, beforehand, to establish credibility
➤ details of mobiles (texting), sat phones, landlines, emailing — of staff, suppliers, key customers
➤ establish hotlines and websites
➤ inform staff about the BCP, triggers, monitoring preparations
➤ how do others get information?
➤ how do key suppliers plan to respond?
educate staff:
educate staff:
   - hygiene: washing, coughing, greeting, touching
➤ educate staff:
  — hygiene: washing, coughing, greeting, touching
  — special care for high-risk employees
→ educate staff:
   — hygiene: washing, coughing, greeting, touching
   — special care for high-risk employees
   — symptoms of AF v. other ’flus
➤ educate staff:
   — hygiene: washing, coughing, greeting, touching
   — special care for high-risk employees
   — symptoms of AF v. other ’flus
   — liberal leave policies
BCP: 5. Testing the BCP

Important, but challenging.
BCP: 5. Testing the BCP

Important, but challenging.

➢ first, test specific tools, not scenarios — technology & infrastructure
BCP: 5. Testing the BCP

Important, but challenging.

- first, test specific tools, not scenarios — technology & infrastructure
- then “desk-top” tests with scenarios — debrief
BCP: 5. Testing the BCP

Important, but challenging.

- first, test specific tools, not scenarios — technology & infrastructure
- then “desk-top” tests with scenarios — debrief
- test remote facilities — computing, communications
BCP: 5. Testing the BCP

Important, but challenging.

➢ first, test specific tools, not scenarios — technology & infrastructure
➢ then “desk-top” tests with scenarios — debrief
➢ test remote facilities — computing, communications
➢ seek surprises, weaknesses in BCP
BCP: 5. Testing the BCP

Important, but challenging.

➢ first, test specific tools, not scenarios — technology & infrastructure
➢ then “desk-top” tests with scenarios — debrief
➢ test remote facilities — computing, communications
➢ seek surprises, weaknesses in BCP
➢ remote sites and staff dispersion — costly
BCP: 5. Testing the BCP

Important, but challenging.

- first, test specific tools, not scenarios — technology & infrastructure
- then “desk-top” tests with scenarios — debrief
- test remote facilities — computing, communications
- seek surprises, weaknesses in BCP
- remote sites and staff dispersion — costly
- which scenarios to test for? low incidence easier but high incidence different in kind.
BCP: 6. Regular BCP Reviews
BCP: 6. Regular BCP Reviews

➢ as weaknesses emerge from testing
➢
BCP: 6. Regular BCP Reviews

- as weaknesses emerge from testing
- as new ideas occur
BCP: 6. Regular BCP Reviews

➢ as weaknesses emerge from testing
➢ as new ideas occur
➢ with internal organisational changes
BCP: 6. Regular BCP Reviews

➤ as weaknesses emerge from testing
➤ as new ideas occur
➤ with internal organisational changes
➤ as available resources (internal and external) change
BCP: 6. Regular BCP Reviews

➢ as weaknesses emerge from testing
➢ as new ideas occur
➢ with internal organisational changes
➢ as available resources (internal and external) change
➢ as (knowledge of) external threats and circumstances changes
Facilities

➢ supply shortages
Facilities

➤ supply shortages
   — stockpiling, reliability of JIT methods?
Facilities

➢ supply shortages
  — stockpiling, reliability of JIT methods?
➢ maintenance
Facilities

➤ supply shortages
   — stockpiling, reliability of JIT methods?

➤ maintenance
   — more frequent cleaning, internal maintenance
Facilities

➤ supply shortages
  — stockpiling, reliability of JIT methods?

➤ maintenance
  — more frequent cleaning, internal maintenance

➤ quarantining
Facilities

➢ supply shortages
  — stockpiling, reliability of JIT methods?

➢ maintenance
  — more frequent cleaning, internal maintenance

➢ quarantining
  — reduce face-to-face interactions
Facilities

➤ supply shortages
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➤ quarantining
   — reduce face-to-face interactions
   — policies on quarantining of returnees? of those who fall ill at work?
Facilities

➤ supply shortages
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➤ maintenance
  — more frequent cleaning, internal maintenance

➤ quarantining
  — reduce face-to-face interactions
  — policies on quarantining of returnees? of those who fall ill at work?
  — disinfectants and hygiene
Profits for Disaster?

These industries will sell more:
Profits for Disaster?

These industries will sell more:

- Medical masks, wipes, and hand-washing liquids.
Profits for Disaster?

These industries will sell more:

➢ Medical masks, wipes, and hand-washing liquids.

➢ Long-lived foods, for storing.
Profits for Disaster?

These industries will sell more:

➤ Medical masks, wipes, and hand-washing liquids.

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➤ Off-grid energy supplies.
Profits for Disaster?

These industries will sell more:

➢ Medical masks, wipes, and hand-washing liquids.

➢ Long-lived foods, for storing.

➢ Off-grid energy supplies.

➢ Ionisation to destroy air-borne pathogens.
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- Biotech: fast detection; vaccine prototyping and manufacture.
- Undertakers etc.
- Health providers.
Investment Advice?

These industries will suffer:

>
Investment Advice?

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➢ *Tourism and hospitality* industries hard hit. *Travel* too.

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- *Property and housing and mortgage providers’* values fall.
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- **Retailing, leisure, casinos, racing, theme parks** hit.

- **Life and re-insurance** companies hit.

- **Property and housing and mortgage providers’** values fall.

- **Poultry industries** hit, with its suppliers.
Opportunities?

Other Beneficiaries:
Opportunities?

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➢ Telecoms, telecommuting industries.
Opportunities?

Other Beneficiaries:

➢ Telecoms, telecommuting industries.
➢ Broadband suppliers.
Opportunities?

Other Beneficiaries:

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➢ Their equipment suppliers.
Opportunities?

Other Beneficiaries:

➢ Telecoms, telecommuting industries.

➢ Broadband suppliers.

➢ Their equipment suppliers.

➢ Pharmas such as Biota/GSK and Gilead/Roche (the antivirals Relenza and Tamiflu, respectively).
How to Prepare Your Business

Be prepared:

➢
How to Prepare Your Business

Be prepared:

➢ Need *BCP* for a pandemic (or other contingencies).
How to Prepare Your Business

Be prepared:

➤ Need **BCP** for a pandemic (or other contingencies).

➤ *Quit danger zones.* Get employees out of at-risk countries, while covering necessary jobs.
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- *Identify core functions and employees,* plan redundancy for 25% to 40% of staff sick.
- *Stock up,* lest supply lines are disrupted.
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- **Quit danger zones.** Get employees out of at-risk countries, while covering necessary jobs.
- **Limit employees’ travel.** Airports will be incubators.
- **Focus on core activities:** are they sustainable over several months?
- **Identify core functions and employees,** plan redundancy for 25% to 40% of staff sick.
- **Stock up,** lest supply lines are disrupted.
- **Go it alone.** Sewerage, water, electricity, other utilities may be interrupted.
Further:
Further:

- *Limit infection in the workplace.* Air circulation and filtration; masks; staggered work hours to limit size of gatherings.
Further:

- **Limit infection in the workplace.** Air circulation and filtration; masks; staggered work hours to limit size of gatherings.

- **Telecommute.** Work from home, where possible — has IT requirements.
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- **Sick leave policy?** Don’t discourage employees from staying home when sick. Sick pay helps.
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- **Limit infection in the workplace.** Air circulation and filtration; masks; staggered work hours to limit size of gatherings.
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- **On-line and self-service options** for clients, customers, and partners.
Further:

➤ *Limit infection in the workplace.* Air circulation and filtration; masks; staggered work hours to limit size of gatherings.

➤ *Telecommute.* Work from home, where possible — has IT requirements.

➤ *Vaccinate employees.* But unlikely to be 100% effective.

➤ *Sick leave policy?* Don’t discourage employees from staying home when sick. Sick pay helps.

➤ *On-line and self-service options* for clients, customers, and partners.

➤ *Communicate.* Lack of information can lead to panic as people fear the worst.
For Individuals ...
For Individuals ...

- Avoid contact with sick people. Indeed, avoid touching anyone else. Or even door-knobs, taps, lift buttons, etc.
For Individuals ...

- Avoid contact with sick people. Indeed, avoid touching anyone else. Or even door-knobs, taps, lift buttons, etc.
- Clean your hands, often.
For Individuals ...

➢ Avoid contact with sick people. Indeed, avoid touching anyone else. Or even door-knobs, taps, lift buttons, etc.

➢ Clean your hands, often.

➢ Don’t touch your eyes, nose, or mouth.
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- Good health habits: sleep, exercise, good foods, no smoking.
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➢ Stay at home with disease or symptoms. Rest, and take medical advice.
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- Clean your hands, often.

- Don’t touch your eyes, nose, or mouth.

- Good health habits: sleep, exercise, good foods, no smoking.

- Stay at home with disease or symptoms. Rest, and take medical advice.

- If sick, avoid dehydration: keep the fluids up.
Discussion

“The gross attack rate (infection rate) expresses the percentage of the population that is likely to become clinically ill. The potential range is quite high. Typically influenza pandemics have a gross attack rate of 20–40% (Taubenberger 2005). The percentage of the infected that succumbs to influenza is the case fatality rate. The mortality rate is determined by multiplying the gross attack rate with the case fatality rate. In the case of Spanish ’flu, it is estimated that the total mortality rate was between 2.5–5% of the world population (Barry 2005). But the 1957 outbreak had a mortality rate of 0.024% in the United States. Typically the very young and the old are at the greatest risk of mortality, but each ’flu outbreak is different and it is not possible to predict what groups will be most vulnerable (Simonsen et al. 2005).”
“It is also difficult to predict how the public will respond to a ’flu outbreak. Historical experience shows that even during an epidemic outbreak, the public soon adapts to the disease and economic activity continues. On the demand side, a pandemic is likely to affect consumer confidence and change consumption and social patterns. It will also affect investor confidence, which can have important long-term consequences. On the supply side, a pandemic will affect the availability of labor, as illness will force many workers to stay home. It will also continue to affect the livestock sector negatively. Governments will have to deal with an uncertain policy environment as they respond to the public health emergency and economic dislocation. Markets have a tendency to over-react, which could exacerbate the economic impact.”

Bloom et al. 2005
**Table 1: Distributions of Disease Outcomes**

Variables used to define distributions of disease outcomes of those with clinical cases of influenza. Rates per 1,000 persons.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Lower</th>
<th>Most Likely</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outpatient/GP visits</strong>—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not at high risk:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–19 yrs old</td>
<td>165</td>
<td>.</td>
<td>230</td>
</tr>
<tr>
<td>20–64 yrs old</td>
<td>40</td>
<td>.</td>
<td>85</td>
</tr>
<tr>
<td>65+ yrs old</td>
<td>45</td>
<td>.</td>
<td>74</td>
</tr>
<tr>
<td>High risk:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–19 yrs old</td>
<td>289</td>
<td>.</td>
<td>403</td>
</tr>
<tr>
<td>20–64 yrs old</td>
<td>70</td>
<td>.</td>
<td>149</td>
</tr>
<tr>
<td>65+ yrs old</td>
<td>79</td>
<td>.</td>
<td>130</td>
</tr>
<tr>
<td><strong>Hospitalizations</strong>—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not at high risk:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–19 yrs old</td>
<td>0.2</td>
<td>0.5</td>
<td>2.9</td>
</tr>
<tr>
<td>20–64 yrs old</td>
<td>0.18</td>
<td>.</td>
<td>2.75</td>
</tr>
<tr>
<td>65+ yrs old</td>
<td>1.5</td>
<td>.</td>
<td>3.0</td>
</tr>
<tr>
<td>High risk:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–19 yrs old</td>
<td>2.1</td>
<td>2.9</td>
<td>9.0</td>
</tr>
<tr>
<td>20–64 yrs old</td>
<td>0.83</td>
<td>.</td>
<td>5.14</td>
</tr>
<tr>
<td>65+ yrs old</td>
<td>4.0</td>
<td>.</td>
<td>13</td>
</tr>
</tbody>
</table>

**Deaths**—

<table>
<thead>
<tr>
<th>Variable</th>
<th>Lower</th>
<th>Most Likely</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at high risk:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–19 yrs old</td>
<td>0.014</td>
<td>0.024</td>
<td>0.125</td>
</tr>
<tr>
<td>20–64 yrs old</td>
<td>0.025</td>
<td>0.037</td>
<td>0.09</td>
</tr>
<tr>
<td>65+ yrs old</td>
<td>0.28</td>
<td>0.42</td>
<td>0.54</td>
</tr>
<tr>
<td>High risk:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–19 yrs old</td>
<td>0.126</td>
<td>0.22</td>
<td>7.65</td>
</tr>
<tr>
<td>20–64 yrs old</td>
<td>0.1</td>
<td>.</td>
<td>5.72</td>
</tr>
<tr>
<td>66+ yrs old</td>
<td>2.76</td>
<td>.</td>
<td>5.63</td>
</tr>
</tbody>
</table>

Source: Meltzer et al. 1999.

Clinical cases are defined as cases in persons with illness sufficient to cause an economic impact. The number of persons who will be ill but will not seek medical care are calculated as follows: Number ill(age) = (Population(age) × gross attack rate) − (deaths(age) + hospitalizations(age) + outpatients(age)). The number of deaths, hospitalizations, and outpatients are calculated below by using the rates presented in this table.

Note: there is a very high degree of uncertainty associated with the rates in Table 1.
## Table 2: Australian Health Outcomes

<table>
<thead>
<tr>
<th>Group</th>
<th>Size (mn)</th>
<th>Percentage (%)</th>
<th>Clinical Illness (mn)</th>
<th>One or more GP visits Lower (th)</th>
<th>Upper (th)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children 0–14</td>
<td>3.92</td>
<td>19.5</td>
<td>3.68</td>
<td>607.248</td>
<td>846.466</td>
</tr>
<tr>
<td>Healthy Adults 15–65</td>
<td>11.75</td>
<td>58.4</td>
<td>8.43</td>
<td>337.28</td>
<td>716.73</td>
</tr>
<tr>
<td>High-Risk Adults 15–65</td>
<td>1.06</td>
<td>5.3</td>
<td>0.68</td>
<td>47.87</td>
<td>101.90</td>
</tr>
<tr>
<td>Health-Care Workers</td>
<td>0.74</td>
<td>3.7</td>
<td>0.53</td>
<td>40.53</td>
<td>45.13</td>
</tr>
<tr>
<td>Elderly 66+</td>
<td>1.79</td>
<td>8.9</td>
<td>0.61</td>
<td>27.35</td>
<td>44.98</td>
</tr>
<tr>
<td>High-Risk Elderly 66+</td>
<td>0.84</td>
<td>4.2</td>
<td>0.28</td>
<td>22.49</td>
<td>37.02</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20.11</strong></td>
<td><strong>100.0</strong></td>
<td><strong>14.22</strong></td>
<td><strong>1082.78</strong></td>
<td><strong>1792.23</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Group</th>
<th>Hospitalisation Lower (th)</th>
<th>Hospitalisation Upper (th)</th>
<th>Death Lower (th)</th>
<th>Death Upper (th)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children 0–14</td>
<td>0.736</td>
<td>6.580</td>
<td>0.052</td>
<td>0.460</td>
</tr>
<tr>
<td>Healthy Adults 15–65</td>
<td>1.518</td>
<td>23.188</td>
<td>0.211</td>
<td>0.759</td>
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<tr>
<td>High-Risk Adults 15–65</td>
<td>1.514</td>
<td>3.515</td>
<td>0.068</td>
<td>3.912</td>
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<tr>
<td>Health-Care Workers</td>
<td>0.096</td>
<td>1.460</td>
<td>0.013</td>
<td>0.048</td>
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<tr>
<td>Elderly 66+</td>
<td>0.912</td>
<td>1.823</td>
<td>0.170</td>
<td>0.328</td>
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<tr>
<td>High-Risk Elderly 66+</td>
<td>1.139</td>
<td>3.702</td>
<td>0.786</td>
<td>1.603</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5.914</strong></td>
<td><strong>40.270</strong></td>
<td><strong>1.300</strong></td>
<td><strong>7.110</strong></td>
</tr>
</tbody>
</table>

These figures are derived by multiplying the population in each group by the rates per 1,000 given in Table 1.

The ratios of at-risk (to respiratory complications) people to healthy people is taken from Swiss data (Piercy & Miles 2003).
References.


