FLU WATCH

Flu watch Consortium – Community study of influenza transmission and immunity.
How much flu was there?
RCGP influenza like illness consultation rates - pandemic and recent years.
PCR positive specimens from GP surveillance schemes – source HPA
National Pandemic Flu Service assessments and antivirals issued and collected.
Death
Hospital
Swab +ve
Influenza Like Illness consult GP
Influenza like illness consult helpline

HOW CAN WE TELL HOW MUCH INFLUENZA IS OUT THERE?

Surveillance - Monitoring those in contact with health services
Death
Hospital
Swab +ve
Influenza Like Illness consult GP
Influenza like illness consult helpline

HOW CAN WE TELL HOW MUCH INFLUENZA IS OUT THERE?

Surveillance - Monitoring those in contact with health services

Research – Measuring Influenza in the community
Death
Hospital
Swab +ve

Influenza Like Illness consult GP
Influenza like illness consult helpline

Influenza Like Illness with no healthcare contact

Respiratory infection not “influenza like”

Asymptomatic Infection
Flu Watch

- National household cohort study
- Weekly follow up of respiratory symptoms
- Daily temperature measurements during illness
- Submission of nasal swabs during illness for PCR identification of influenza.
- Serological data on subset
- T cell data on subset
Flu Watch Recruitment 2009/10

Month

- May
- June
- July
- August
- September
- October
- November
- December
- January
- February

Number of participants

- 0
- 500
- 1000
- 1500
- 2000
- 2500
- 3000
- 3500
- 4000
- 4500
Pandemic summer wave.
RCGP data - ILI and PCR confirmed rates

Rate per 100,000 person weeks

ILI rate
PCR positive
Flu Watch Data – age / region standardised

[Graph showing data with blue bars for ILI fever, light blue bars for ILI no fever, and red line for PCR over a period from Year/Week 2006/46 to 2009/03.]

ILI fever
ILI no fever
PCR

Age & Region standardised rate per 100,000 person weeks

Year/Week
**Flu Watch vs. RCGP rate ratios**

- **Seasonal Flu 2008/9**:
  - Flu Watch ILI rate 70 times higher than RCGP ILI Rate.
  - Flu Watch PCR rate 47 times higher than RCGP PCR rate.

- **Pandemic May-July 2010**
  - Flu Watch ILI rate 11 times higher than RCGP ILI Rate.
  - Flu Watch PCR rate 5 times higher than RCGP PCR rate.
Public information pandemic summer wave
Pandemic Autumn/Winter Wave
Flu Watch ILI and PCR confirmed disease rates compared to RCGP.
Proportion with H1N1 pandemic strain titre of 32 or greater - December 2010

% with titre of 32 or greater

Age group
0 to 14
15 to 44
45 to 64
65+

% with titre of 32 or greater
Health seeking behaviour – autumn/winter wave.
Visit GP during illness

<table>
<thead>
<tr>
<th>Illness type</th>
<th>H1N1</th>
<th>ILI 1</th>
<th>ILI 2</th>
<th>RESP</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>33</td>
<td>118</td>
<td>325</td>
<td>1,224</td>
</tr>
<tr>
<td>Yes</td>
<td>7</td>
<td>36</td>
<td>32</td>
<td>79</td>
</tr>
</tbody>
</table>
Phone GP during illness

Illness type

- H1N1: 36 (No), 4 (Yes)
- ILI 1: 130 (No), 24 (Yes)
- ILI 2: 346 (No), 11 (Yes)
- RESP: 1,287 (No), 16 (Yes)
Phone NHS direct during illness

H1N1  ILI 1  ILI 2  RESP

<table>
<thead>
<tr>
<th>Illness type</th>
<th>2</th>
<th>8</th>
<th>3</th>
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<tbody>
<tr>
<td>H1N1</td>
<td>38</td>
<td>146</td>
<td>354</td>
<td>1,300</td>
</tr>
<tr>
<td>ILI 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ILI 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RESP</td>
<td></td>
<td></td>
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</table>
Phone National Pandemic Flu Service during illness

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<tr>
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<th>ILI 1</th>
<th>ILI 2</th>
<th>RESP</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>37</td>
<td>141</td>
<td>353</td>
<td>1,299</td>
</tr>
<tr>
<td>Yes</td>
<td>3</td>
<td>13</td>
<td>4</td>
<td>4</td>
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</tbody>
</table>
Use National Pandemic Flu Service Website during illness.

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%

Illness type

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<td>148</td>
<td>353</td>
<td>1,301</td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td>6</td>
<td></td>
<td>2</td>
</tr>
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</table>
How were cases treated?
Over the counter drugs during illness

<table>
<thead>
<tr>
<th>Type of illness</th>
<th>H1N1</th>
<th>ILI 1</th>
<th>ILI 2</th>
<th>RESP</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>10%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>90%</td>
<td>80%</td>
<td>70%</td>
<td>60%</td>
</tr>
</tbody>
</table>
Antibiotics during illness

<table>
<thead>
<tr>
<th>Illness Type</th>
<th>H1N1</th>
<th>ILI 1</th>
<th>ILI 2</th>
<th>RESP</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>35</td>
<td>116</td>
<td>331</td>
<td>1237</td>
</tr>
<tr>
<td>Yes</td>
<td>5</td>
<td>38</td>
<td>26</td>
<td>66</td>
</tr>
</tbody>
</table>

Legend:
- Green: No
- Red: Yes
Take Tamiflu during illness

<table>
<thead>
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</tr>
</thead>
<tbody>
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<td>143</td>
<td>11</td>
</tr>
<tr>
<td>ILI 2</td>
<td>353</td>
<td>4</td>
</tr>
<tr>
<td>RESP</td>
<td>1,300</td>
<td>3</td>
</tr>
</tbody>
</table>
Proportion of Tamiflu prescribed to different illness types

- ILI 1: 55%
- ILI 2: 20%
- RESP: 15%
- H1N1: 10%
Conclusions

• Influenza surveillance greatly underestimates community incidence of disease and can be markedly distorted by changes in health seeking behaviour.

• The summer wave of the pandemic was relatively small compared to seasonal influenza waves – however surveillance data suggested the opposite. The discrepancy is most likely due to changes in health seeking behaviour influenced by intense media reporting.

• Even during the pandemic the great majority of cases did not seek medical attention or phone help lines and therefore did not receive treatment.

• Most Tamiflu prescriptions were to those who did not have virological evidence of H1N1 infection when tested.

• Infection rates as measured by serology were substantially higher than clinical attack rates suggesting that many infections were asymptomatic/minimally symptomatic.

• Large scale national community studies need to be rolled out very rapidly in the event of a pandemic but the current research governance system introduces severe delays to studies recruiting through primary care.
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