H1N1 Pandemic

US Situation Update and
CDC International Response

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Centers for Disease Control and Prevention
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Epidemiology/Surveillance

Percentage of Visits for Influenza-like Illness (ILI) Reported by the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), National Summary 2008-09 and Previous Two Seasons
Weekly Influenza Activity

FLUView

A Weekly Influenza Surveillance Report Prepared by the Influenza Division
Weekly Influenza Activity Estimates Reported by State and Territorial Epidemiologists*

Week Ending October 17, 2009- Week 41

*This map indicates geographic spread and does not measure the severity of influenza activity.
Epidemiology/Surveillance
Percentage of Visits for Influenza-like Illness (ILI) Reported by the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), National Summary October 1, 2006 – October 17, 2009

While ILI syndromic surveillance data do not provide an indication of severity, they show how much influenza is circulating at any given time and provide a basis for interpreting trends in hospitalization and death.
Epidemiology/Surveillance

Cumulative rate of hospitalization/100,000 population ages 0-4, EIP, 2003-2009

- 2003-4 (H3)
- 2004-5 (H3)
- 2005-6 (H3)
- 2006-7 (H1)
- 2007-8 (H3)
- 2008-9 (H1)
- 2009 Spr (Novel H1)
- 2009-10
Epidemiology/Surveillance

Cumulative rate of hospitalization/ 100,000 population
ages 5-17, EIP, 2003-2009

0 0.2 0.4 0.6 0.8 1 1.2 1.4 1.6 1.8 2

wk 1 sep wk 3 sep wk 5 oct wk 7 oct wk 9 oct wk 11 nov wk 13 dec wk 15 dec wk 17 dec wk 19 jan wk 21 feb wk 23 mar wk 25 apr wk 27 may wk 29 jun wk 31 jul wk 33 aug wk 35 aug wk 37 aug wk 39 aug wk 41 aug wk 43 aug wk 45 aug wk 47 aug wk 49 aug wk 51 aug

2003-4 (H3)
2004-5 (H3)
2005-6 (H3)
2006-7 (H1)
2007-8 (H3)
2008-9 (H1)
2009 Spr (Novel H1)
2009-10
Epidemiology/Surveillance

Cumulative rate of hospitalization/ 100,000 population
ages 18-64, EIP, 2005-2009

2005-6 (H3)
2006-7 (H1)
2007-8 (H3)
2008-9 (H1)
2009 Spr (Novel H1)
2009-10
Epidemiology/Surveillance

Cumulative rate of hospitalization/ 100,000 population
ages 65+, EIP, 2005-2009

- 2005-6 (H3)
- 2006-7 (H1)
- 2007-8 (H3)
- 2008-9 (H1)
- 2009 Spr (Novel H1)
- 2009-10
Weekly Lab-Confirmed Deaths ($n=411$)

Influenza Week 41 – 23 OCT 2009

Reporting Period End Date
Deaths ($n$)
Epidemiology/Surveillance

Lab-Confirmed Deaths by Age Group through Week 41 (n=411*)
Influenza Week 41 – 23 OCT 2009

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Deaths (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4 Yrs</td>
<td>14</td>
</tr>
<tr>
<td>5-18 Yrs</td>
<td>52</td>
</tr>
<tr>
<td>19-24 Yrs</td>
<td>27</td>
</tr>
<tr>
<td>25-49 Yrs</td>
<td>130</td>
</tr>
<tr>
<td>50-64 Yrs</td>
<td>133</td>
</tr>
<tr>
<td>≥65 Yrs</td>
<td>55</td>
</tr>
</tbody>
</table>

*Numbers are cumulative from start of MMWR week 35 (August 30, 2009)
## Lab-Confirmed Mortality per 100,000 Population by Age Group (n=411*)

**Influenza Week 41 – 23 OCT 2009**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Deaths per 100,000 Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4 Yrs</td>
<td>0.07</td>
</tr>
<tr>
<td>5-18 Yrs</td>
<td>0.09</td>
</tr>
<tr>
<td>19-24 Yrs</td>
<td>0.11</td>
</tr>
<tr>
<td>25-49 Yrs</td>
<td>0.12</td>
</tr>
<tr>
<td>50-64 Yrs</td>
<td>0.24</td>
</tr>
<tr>
<td>≥65 Yrs</td>
<td>0.14</td>
</tr>
</tbody>
</table>

*Deaths with unknown ages are not included (n=0). Excludes jurisdictions for which age distribution information is not available.

International response
Objectives

1) Better understand pandemic influenza

2) Support countries in preventing and mitigating
Monitoring Global Activity

1) Who is at risk of severe disease?
2) Is the virus changing?
3) Is there resistance to antivirals?
4) How effective is the vaccine?
5) Is the virus causing more severe illness and death?
6) How easily is the virus transmitted?
7) Can health care system handle patients?
1) Laboratory support for diagnostics
2) In-country epidemiologic expertise
   1) CDC field offices and international influenza staff
   2) Deployments
3) Training
   1) Laboratory (PCR)
   2) Infection control
4) Special studies
   1) Community mitigation – e.g., school closure studies
   2) Vaccine studies
   3) Population-based studies
5) Support WHO in administration of vaccine donation
6) Work closely with PAHO, WHO, MoHs, others
Country Highlights
Epidemiology

- Staff sent to
  - Argentina (14), Chile (4), Mexico (36), South Africa (2), Australia (2), Kenya (1)

- Studies conducted or supported disease pyramids
  - Mexico, Chile, Argentina, Australia
    - Serologic studies
      - Mexico, Chile, Peru
    - Studies of severe disease and risk factors
      - Argentina, Mexico, Thailand
    - Household transmission and secondary attack rates
      - Mexico, South Africa, Argentina, Kenya, Thailand
    - Effectiveness and Economic impact of school closures
      - Argentina
    - Analysis of health care capacity
      - Argentina
Proportion of all influenza types that are 2009 H1N1

Note: Week 42: October 12-19
What have we learned?

1) Stable virus overall
2) Little resistance to antivirals
3) Severity not worsening
4) Certain risk groups consistently more vulnerable (pregnant women, underlying disease)
5) Young and non-senior adults most affected with severe disease
6) Unusual seasonality
US Vaccine Donation

1) 10% of US vaccine order will go to other countries
2) Other countries are also sharing vaccine
3) WHO is distributing
4) CDC is leading assessment of vaccine effectiveness and safety