Pandemic Influenza A H1N1 in India

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Impact of 1918 H1N1 Pandemic
Deaths due to Influenza in India-1918

<table>
<thead>
<tr>
<th>State</th>
<th>No of Deaths</th>
<th>Death Rate/1000</th>
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</thead>
<tbody>
<tr>
<td>Delhi</td>
<td>23,612</td>
<td>56.6</td>
</tr>
<tr>
<td>Bengal</td>
<td>386,572</td>
<td>8.5</td>
</tr>
<tr>
<td>Bihar</td>
<td>709,976</td>
<td>20.5</td>
</tr>
<tr>
<td>Assam</td>
<td>111,340</td>
<td>18.6</td>
</tr>
<tr>
<td>Agra&amp;Oudh</td>
<td>2,034,257</td>
<td>43.4</td>
</tr>
<tr>
<td>Punjab</td>
<td>898,947</td>
<td>45.4</td>
</tr>
<tr>
<td>NWFP</td>
<td>89,035</td>
<td>43.6</td>
</tr>
<tr>
<td>Central Province</td>
<td>924,949</td>
<td>66.4</td>
</tr>
<tr>
<td>Madras</td>
<td>682,169</td>
<td>16.7</td>
</tr>
<tr>
<td>Coorg</td>
<td>2,014</td>
<td>11.5</td>
</tr>
<tr>
<td>Bombay</td>
<td>1,059,497</td>
<td>54.9</td>
</tr>
<tr>
<td>Burma</td>
<td>137,491</td>
<td>13.9</td>
</tr>
<tr>
<td>Ajmer-Merwara</td>
<td>29,835</td>
<td>52.5</td>
</tr>
<tr>
<td></td>
<td>7,089,694</td>
<td></td>
</tr>
</tbody>
</table>

Source: Annual Report of The Sanitary Commissioner with the Govt. of India
Capacity for influenza in India before H5N1 outbreaks

- 3 WHO National Influenza Centres (NICs), only one functional (NIV)
- Some lab capacity in NCDC (formerly NICD) and V Patel Chest Institute, Delhi
- No reliable data on influenza morbidity and mortality
- No data on trends, seasonality
- Disease not taken seriously
- No Influenza vaccination policy; vaccine not manufactured in the country
- Influenza vaccine or antiviral drugs not used

H5N1 outbreaks in Poultry in India
2006-2010

- First outbreak in Jan/Feb 2006
- Last outbreak 30 Jan 2010
- Affected 33 districts in 8 States
- All outbreaks in poultry
- No human case
- 3 times country declared H5N1 free, the last on 30 June 2010
What H5N1 outbreaks changed?

• Strengthening of Lab capacity
• Rapid Response Team (RRTs) trained
• Procurement of PPE and Oseltamivir for cullers and health care workers
• Identification of isolation facilities
• Training of physicians for management of cases
• Infection control practices in isolation facilities improved
• Better Risk communication

H1N1 Pandemic begins
H1N1 pandemic begins (2)

Strategy adopted
• International screening to detect suspect cases
• Detect and isolate all cases and Contact tracing and chemoprophylaxis so that infection does not establish in the community
• Admit all suspect cases in isolation hospitals, test and treat with oseltamivir
• Strengthening of lab capacity (NIV, NCDC, other identified labs)
• PPE and oseltamivir made available to health care workers
• Guidelines on all aspects prepared, put on Health Ministry Website and sent to all states
• Risk communication – Awareness campaign, toll free telephone 1075
• Intensive Monitoring of pandemic and actions taken

H1N1 pandemic begins (3)

• Screening for international passengers
  – Started-27 April 2009
  – 83 counters on 22 airports
  – 225 doctors, 172 paramedic
  – First positive case came on 13 May, confirmed 16 May 2009
  – Community transmission did not occur till mid July
  – First death on 3 August 2009 (in Pune)
  – Country gained more two months for preparation before community transmission started and fatality occurred
What was done for lab strengthening before community transmission started

- Training of key lab personnel in June 2009
- Guidelines issued for sample collection, storage and transportation (www.mohfw.nic.in)
- Proforma designed for sample collection
- VTM provided up to district level
- Reagents and test kits provided to identified labs
- Biosafety guidelines issued
- PPE made available

First Death in India - 3 August 2009

Pune reports India’s first H1N1 flu death

No need to panic, says NIV director

14-Year-Old Girl Dies In City Hospital

Growing menace

No need to panic, says NIV director

Pune reports India’s first H1N1 flu death

No need to panic, says NIV director

Pune reports India’s first H1N1 flu death

No need to panic, says NIV director
Panic in Pune – 5 August 2009

• Private Doctors refuse to treat patients with flu like symptoms
• All go to Naidu Infectious Diseases Hospital
Panic in Pune – 5 August 2009

- Many hundreds come to Naidu Hospital for Testing
- All wearing masks provided by the Hospital

Panic in Pune

AFTER ALL, CAUTION IS FOR ALL

Sunday Krissgarp

WHO Global NIC Meeting, Hammamet, Tunisia
30 November 2010 - 3 December 2010
Panic in Pune – 7 August 2009

Over 3,000 visit 15 screening centres

Relief for Naidu hospital as rush of people cases

Major shift in testing and treatment strategy

H1N1 pandemic impact (data as on 21 Nov 2010)

- Total suspect cases Tested in labs – 200333
- Pandemic H1N1 Positive cases – 45897 (from 31 States/UTs) (22.9 %)
- Deaths – 2721 (24 States/UTs) (CFR 5.9 %)
**Enhanced Surveillance and Laboratory Support**

- The Community surveillance to detect clusters of influenza like illness was done through Integrated Disease Surveillance Project.

- The laboratory network was strengthened. 45 laboratories are now testing Samples (26 in Government Sector and 19 in Private sector).

- States allocated to the identified laboratories.

- Reagents procured Centrally and given to the Laboratories in Government sector.

- Demand for Viral Transport medium from the states met centrally.
Influenza laboratory network

- 26 labs in public sector
- 19 labs in Private sector
- 6 labs with BSL-3 facility
- 2 labs (NCDC, NIV) can isolate virus and can do sequencing

NCDC Influenza laboratory network

- 12 Laboratories identified
- MOU signed with labs
- Funds released to 10 labs
- Equipment procured, Reagents provided
- Training done in June 2009
- 10 labs fully functional
- All labs with RT-PCR
- Virus isolation and sequencing facility in NCDC, Delhi
ICMR Influenza laboratory network

- 11 Laboratories
- 9 with RT-PCR facility
- Training in June 2009
- Virus isolation and sequencing facility in NIV Pune

What next in post pandemic period

- Surveillance for seasonal influenza
- Surveillance for other respiratory viruses
- Overall capacity strengthening under Integrated Disease Surveillance Project (IDSP)
## Efforts for Expansion of Influenza Surveillance Network

- Identification of some regional centres
- At least 5-10 samples to be collected weekly by each centre
- To follow approved protocols for collection of samples and isolation/identification of virus
- All virus isolates to be sent to a referral centre for molecular characterization
- Setting-up of a national influenza virus repository
- Selected representative strains would be sent to WHO Collaborating Centre
- Feedback on influenza activity and outbreaks
- Expansion of network based on the experience gained

## Conclusion

- Disease is declining
- Monitoring & surveillance of unusual flu-like illness & severe pneumonia is continued
- Influenza will be a primary health problem for all
- Need for expansion of influenza surveillance
Thank You