Pneumonia in an adult

A 66 yr old medical school professor was traveling in India, Hong Kong, Singapore, and Bangkok when he developed hoarseness, followed over the next 4 days by bronchospasm, non-productive cough, fever and fatigue.
Pneumonia in an adult

He treated himself with bronchodilators, tylenol, and then a tapering course of steroids

He terminated his trip and returned to the U.S., however, he required a wheelchair to change planes

Past medical history: Asthma for > 60 years
Pneumonia in an adult

On return home, the professor went to the Emergency Department

Physical exam revealed T= 99.7°F, RR= 22, scattered wheezes, and rales in left lower lung field

paO2 was 89% and chest x-ray revealed pneumonia in the left lower lobe and lingula

WBC 12,100    76S/ 3B/ 11L/ 6M/ 2E/ 1 A.L.
What do you think is the most likely viral diagnosis?

1. Influenza
2. Avian Influenza
3. SARS
4. RSV
5. Parainfluenza
6. Adenovirus
What rapid viral diagnostic test does your laboratory routinely perform on an ADULT with pneumonia?

1. Rapid influenza test
2. Rapid RSV test
3. Both influenza and RSV
4. Rapid respiratory screen (e.g. RSV, influenza, parainfluenza, adenovirus)
5. None of the above
What is the main rapid test METHOD you perform for respiratory viruses?

1. EIA
2. OIA, Zstat Flu, Binax or other newer test
3. Immunfluorescence
4. Shell vial culture
5. RT-PCR or other molecular method
6. No rapid tests, only culture
Pneumonia in an adult

- The patient was producing no sputum
- A nasopharyngeal swab was sent for a viral diagnostic test
Are samples for rapid respiratory testing batched in your laboratory?

1. Yes
2. No
What is your average turnaround time during operating hours?

1. 30 minutes or less
2. One hour
3. Two hours
4. Three hours
5. Four hours
6. More than 4 hours
Pneumonia in an adult

- Respiratory Screen DFA was strongly positive for Respiratory syncytial virus

Result reported to ED prior to admission
RSV-infected respiratory epithelial cells (IF-rhodamine label)
RSV Pneumonia in an adult

• The patient was treated with oxygen, respiratory therapy with bronchodilators, and steroids.

• After 5 days in the hospital, he was discharged to home.

• 5 days later, he was back at work part time, and by 7 days was at work fulltime
RSV Pneumonia in Adults

• First reported in the 1960s
• Increased risk for serious disease:
  – Adults with underlying cardiopulmonary disease
  – Frail elderly persons
  – The severely immunocompromised
Clues to RSV in the Elderly

- Typically begins with nasal congestion and discharge*
- Cough affects 90-97%
- Fever in 50%, typically lower than flu
- Rales and wheezes on exam in 30-40%
- Pneumonia often alveolar, but may be interstitial; lobar consolidation in 35%
## RSV in adults at case hospital

<table>
<thead>
<tr>
<th>Time period</th>
<th>Test</th>
<th>No. RSV positive</th>
<th>No. Pos. Adults (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994-1997</td>
<td>EIA*</td>
<td>749</td>
<td>14 (2%)</td>
</tr>
<tr>
<td>1999-2002</td>
<td>DFA** Screen</td>
<td>1352</td>
<td>221 (16%)</td>
</tr>
</tbody>
</table>

*RSV done only if ordered  **MAB pool on all samples