

Healthcare System Capacity During an Influenza Pandemic: A Tabletop Exercise

April 23, 2006

1 pm – 5 pm

NDMS Annual Conference

Reno, NV

Tabletop Objective

- Identify major issues for hospitals and local, state, and federal level of government if much larger than usual numbers of patients require medical care during an influenza pandemic

Agenda

- Influenza background
- Tabletop rules
- Tabletop assumptions
- Scenario in 4 phases
 - Scenario presentation
 - Moderated panel discussion
 - Audience comment and question period
- General discussion with panel and audience

Tabletop Rules

- Reserve comments and responses to the context of the current scenario and issues of surge capacity
- Always try to use real world estimates and resources
- Team consensus-building and “AHA!” moments are encouraged!

Impact Estimates: FluSurge

- FluSurge: CDC software to estimate pandemic impact on hospitals (<http://www.cdc.gov/flu/flusurge.htm>)
 - Specify outbreak length (6, **8**, 12 wks)
 - Specify attack rate (15%, **25%**, or 35%)
 - Enter population: 2003 census estimates
 - Results: influenza-related admissions, patients in hospital/ICU/on ventilator, influenza-related deaths
- FluSurge influenza-related illness assumptions
 - Avg length of hospital stay: 7 days
 - Avg length of ICU stay: 10 days
 - Average length of ventilator usage: 10 days
 - ~ 15% of admissions will need ICU care
 - ~ 7.5% of admissions will need ventilators

Tabletop Assumptions

- Vaccine supply--none
- Antiviral supply—very limited
- Staffing levels--normal

Scenario

April 2006

- An outbreak of unusually severe respiratory illness is identified in a small village in China
- Specimens from ill villagers are sent to labs in mainland China and Hong for testing
- Influenza A(H7N3), a virus only very rarely found in humans, is found in many specimens
- There is concern that the virus is being spread by human-to-human transmission
- Epidemiologic investigations are launched to determine if this is true

May 2006

- Human H7N3 cases/outbreaks are reported in Hong Kong, Singapore, South Korea, and Japan
- It is confirmed that the virus is easily transmitted from person-to-person
- Vaccine development work is underway but it will be months before any doses are available
- There are no cases in the US...yet.

It's coming!

- Would you normally do anything now? What would you do?
- How will your community coordinate a pandemic response as it relates to managing unusually large numbers of patients?

June 2006

- The first H7N3 cases are identified in the U.S.
- Local H7N3 outbreaks are soon reported in several major U.S. cities.
- There is no H7N3 vaccine available yet.
- General supplies of antivirals are nearly gone.
- No cases have been identified in your community.
- The “worried well” are calling and visiting physicians offices, the health department, and emergency rooms at unusually high rates.

It's coming...soon!

- Are there additional things you will do now that the virus is in the US?
- What will you do to manage the “worried well” in your community?
- Are there any “lessons learned” from dealing with influenza during the past 2 seasons that can be applied to this situation?

Early July 2006

- The first H7N3 case in your community is identified.
- Within a week, multiple cases, including a school outbreak, are identified.
- Outpatient and hospitalized cases are rapidly increasing.
- There is still no vaccine available.
- Some health care staff don't want to come to work for fear of becoming infected with H7N3 or leaving their families.

Local level estimates*: Week 2

	Weekly admits	# flu patients in hospital	# flu patients in ICU	# flu patients on vents	# flu deaths
Los Angeles County, CA	3,023	3,023	577	289	0
Washoe County, NV	123	91	24	12	0

* Assume 8 wk outbreak with 25% attack rate



It's here!

- What will you do now that the virus is in your community?
- What steps will be taken to ensure there are enough staff to keep the hospitals functioning?
- What steps will be taken to free up hospital beds?

Late July 2006

- Your community is in the height of the first wave of the pandemic.
- Hospital capacity (including ICU) is being rapidly (if not already) exceeded.
- There aren't enough ventilators for all those who require breathing assistance.
- Critical supplies are depleted.
- The number of deaths has overwhelmed the morgue capacity.

Local level estimates*: Week 5

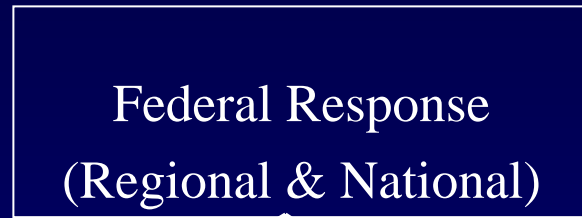
	Weekly admits	# flu patients in hospital	# flu patients in ICU	# flu patients on vents	# flu deaths
Los Angeles County, CA	5,744	6,035	1,267	633	854
Washoe County, NV	234	178	52	26	35

* Assume 8 wk outbreak with 25% attack rate

It's bad!

- What will you do now that hospital capacity is being overwhelmed?
- How will the shortage of mechanical ventilators and other supplies be handled?
- What will healthcare systems do when their morgues are full?

Tiers of Response – Patient Care



Federal Response

6th Tier

*State / Interstate
Coordination (MDH)*

5th Tier

*Coordination of Intrastate
Regions (MDH)*

4th Tier

*Jurisdiction Incident
Management (County)*

3rd Tier

Healthcare “Coalition” (Compact)

2nd Tier

Healthcare Facility

1st Tier



Avian Flu strikes Florida