

# Planning for Pandemic Influenza: Hospital Surge Capacity Issues

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# Pandemic Influenza Planning

- **Goals to planning**
  - Limit morbidity and mortality
  - Minimize social disruption
  - Decrease economic losses
- **Unique characteristics of outbreak**
  - Responders will become ill
  - Outbreak will occur over months
  - Regional and federal assets will be limited (e.g. equipment, pharmaceuticals)

# Pandemic Influenza Planning (2)

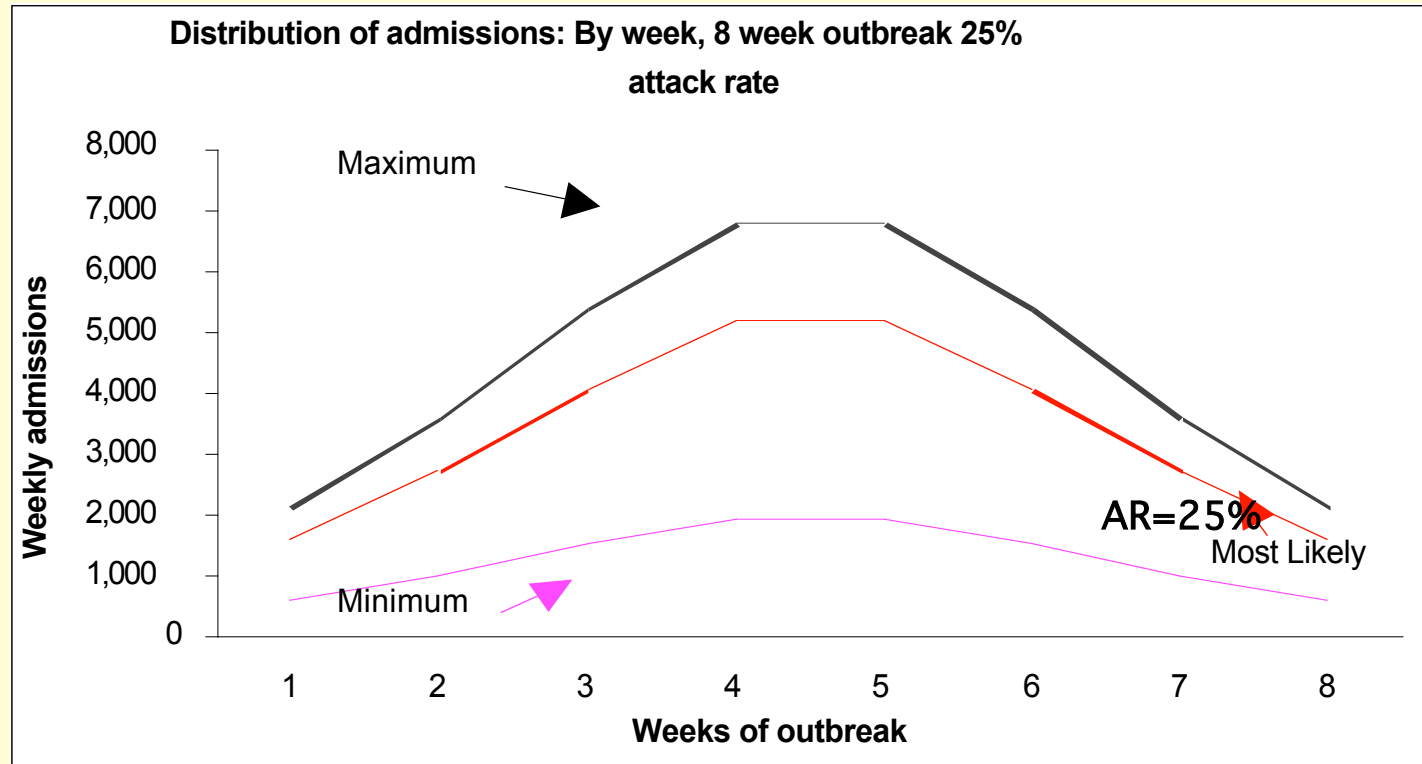
- Attack rates (AR) range 15% - 35%
- Contingency plans depend on AR
- Flexible & scalable health care & public health plans needed
- Hospitals scalability in face of present day reduced staffing levels and minimized inventory will be difficult

# Estimated Range of Persons Affected from Pandemic Influenza, NYC

<b>Health Impact</b>	<b>Number (attack rate range 15% - 35% )</b>	<b>% of NYC Pop. (8.086 million)</b>
Total Infected	1.2 mil - 2.8 mil	(15 – 35)
Outpatient Visits	485,160 – 1.2 mil	(6 – 15)
Hospitalizations	8,086 – 24,258	(0.1 – 0.3)
Deaths	2,426 – 5,660	(0.03 – 0.07)

Adapted from: Taylor et al. “Pandemic Influenza Preparedness in Maryland” , *Biosecurity* 3:1, 2005  
FluSurge1; GNYHA Health Care Statistics 2005.

# Impact of Pandemic on Hospital Admissions in NYC



Source: CDC FluSurge 1.0 \_ Data from referenced sources

# Impact of Influenza Patients on NYC Hospitals at Peak (Week 5)

<b>Variable</b>	<b># Related to Influenza Pts.</b>	<b>% Capacity Increase due to Influenza Patients</b>
<b>Daily Admissions</b>	806	24
<b>Weekly Admissions</b>	5,173	18
<b>Bed Capacity</b>	5,435	21
<b>ICU Capacity</b>	1,141	67
<b>Vent. Capacity</b>	570	24
<b>Deaths in hosp.</b>	555	32

Source: CDC FluSurge 1.0 \_ Data from referenced sources; NYC Vital Statistics, 2003; DOHMH Hospital Survey 2001.

# Objectives of Surge Capacity Planning During Pandemic Influenza

- Reduce health care staff absenteeism
- Ensure expeditious patient discharge from hospital
- Prepare EDs for high patient volume
- Review policies for hospital admission, scheduling elective admissions, surgeries
- Plan for limited availability and increased need for allocation of equipment & supplies
- Develop additional patient-isolation space

Source: Taylor et al. “Pandemic Influenza Preparedness in Maryland” , *Biosecurity* 3:1, 2005; CID;2002:35:590-6.

# Bed and Isolation Capacity (1)

- To Increase beds:
  - Implement rapid patient discharge plans
  - Increase % of opened licensed staffed beds
  - Convert procedure / PACU areas to pt. care
  - Cancel elective admissions, surgeries
  - Use halls for non-contagious patients



# Bed and Isolation Capacity (2)

- To increase isolation capacity:
  - Cohort patients with suspected influenza
  - Use non-traditional methods
  - Establishment of screening and isolation procedures external to ED
  - Refer non-event related ambulatory patients away from ED

# Staffing Issues (1)

Hospitals may need to:

- Track and report health care personnel absenteeism, availability
- Implement employee screening procedures for illness
- Implement rapid cross-credentialing and/or privileging procedures for clinicians, if available
- Implement plans for accepting volunteers into hospitals
- Reassign staff (OR, ambulatory care) to medical floors

# Staffing Issues (2)

Hospitals will need to:

- Keep staff updated (PA system, looped messaging system)
- Provide just-in time training for following proper infection control guidelines
- Provide of mental health services for staff and patients
- Provide of food, sleeping quarters

# Additional Staff Resources

- Hospital/clinic staff
- Medical Reserve Corps
- Trainees in health professions
- Lay public (CERT teams)
- Federal personnel

# Possible Alternate Care Locations

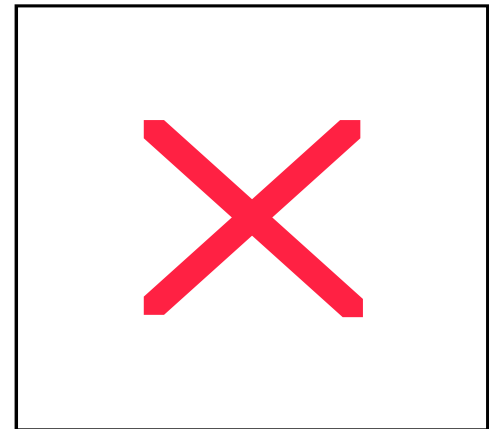
- Primary care centers
- Procedure care centers
- Long term care facilities
- Home-based care
- Family-based care
- Sheltered hospital, hotel, school, convention center

Unprecedented demand



# Roles of Alternate Care Sites

- Ease burden on hospitals by providing:
- Preliminary screening / admission criteria
- Basic care – basic nursing, drip meds, IVs, oxygen?
- Medications
- Patient documentation
- Laboratory testing
- Food / water / sanitation
- Linen and medical waste handling
- Public Information



# Resource Allocation (1)

- In a declared pandemic, it is likely that hospitals will be asked to:
  - Report via HERDS on numbers of flu patients and levels of critical assets (e.g., respirators, PPE, antivirals)
  - Acquire additional resources from local and out-of-state vendors
  - Be in a position to acquire pharmaceuticals and supplies from the Strategic National Stockpile or other sources

# Resource Allocation (2)

## Citywide Coordination

- NYS / NYC DOHMH and OEM will coordinate hospital response and requests within region (HERDS data)
- Will present hospital needs and issues to emergency operation centers
- Will share decisions with medical facilities via HAN, teleconference calls, e-mail, FAX



# Discussion / Questions

*Our collective goal is to plan to maximize our ability to care for our population during a period of potentially limited resources in our health care system and community.*

*Based on this discussion \_ what do you see as your greatest challenges?*

*Sparking* Illustration by Timmy S. Johnson  
11/10/09



# NYC Statistics

<b>Variable</b>	<b>Number</b>
Population	8,086,000 (1)
Hospital Staffed Beds	26,177 (2)
Staffed ICU Beds	1,713 (3)
Hospital Ventilators	2,367 (3)

Sources: (1) U.S. Census (2003); (2) NYS ICR (2003); NYC DOHMH 2001 Hospital Survey

# Basic Assumptions: Pandemic Influenza, First Wave

Duration of first wave	8 weeks
Attack rate	25%
Average length of hospitals stay	7 days
ICU stay	10 days

Sources CID:2002;35590-

# Bed and Isolation Capacity

- To plan for these pandemic activities,
  - Performing inventories of critical assets
  - Operationalizing isolation and screening protocols and recommendations in key areas
  - Identifying non-traditional isolation and patient care areas and auxiliary sites
  - Conducting tabletop exercises, drills, and other HRSA-funded preparedness activities
  - GNYHA/DOHMH legal obstacles that hospitals may expect during an emergency

# Communications

- To plan for these pandemic activities, hospitals and partner organizations (e.g., NYC DOHMH, NYSDOH, and GNYHA) are:
  - Testing HERDS reporting/response at planned intervals
  - Conducting HRSA-supported “call-down” communications drills

# Staffing Issues

- To plan for these pandemic activities, hospitals and partner organizations (e.g., NYC DOHMH, NYSDOH, and GNYHA) are:
  - Developed guidelines for rapid credentialing and cross-credentialing
  - Developing Medical Reserve Corps activities
  - Mental health trainings
  - Risk communication trainings

# Resource Allocation

- To plan for these pandemic activities, hospitals and partner organizations (e.g., NYC DOHMH, NYSDOH, and GNYHA) are:
  - Developing specialized HERDS templates, supply checklists, resource lists, and other templates
  - Refining agency and hospital roles in SNS coordination and delivery
  - Conducting operational drills