

**Pandemic Influenza Hospitalization Tabletop**  
**Sunday, June 5, 2005**  
**12:00 pm- 5:30 pm**  
**Hyatt Regency -Albuquerque, NM**  
**Overview Document for Panelists**

**Objective**

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

**Background**

It is estimated that an influenza pandemic will affect a local area for a period of 6-12 weeks and cause a dramatic increase in the number of persons requiring medical care. Since most healthcare facilities function with minimum beds, staff, and supply inventories, it is expected that the demands of a pandemic will rapidly exceed currently available capacity. Methods for addressing this increased impact need to be established now, prior to the start of a pandemic. While not every part of the country will be hit at exactly the same time, it is expected that the entire country will be affected within a relatively short period of time therefore making shifting of resources from city or area to another a much less practical pandemic response than it might be for certain bioterrorist or natural disasters. It is our intent that the discussion during this exercise bring to light pandemic surge capacity issues that need to be addressed and possible solutions. We hope to publish the lessons learned from this exercise so that other organizations engaged in similar planning efforts can learn from your experiences.

**Discussion Topics**

Pandemic planning requires addressing a large number of critically important and inter-related issues but this exercise will focus only, to the extent possible, on healthcare system surge capacity. Each panel member was selected based on the different perspectives they bring to the issues of surge capacity and, as a panel member, we look forward to hearing your perspective on the surge capacity issues your organization will face, how you expect to address those issues, the obstacles you have encountered in preparing for pandemic surge capacity needs, your expectations of other organizations and agencies, and the types of assistance you would need from or could provide to other organizations. We specifically hope to address the following issues/possible solutions and any others you feel are pertinent to keeping local healthcare systems functioning during a pandemic.

**1. Staffing Needs**

Can new staff be added?

- Who? Options: redirect existing staff, grant emergency privileges to all providers at all area facilities, retirees, students/trainees, non-practicing providers, others?
- What legal/credentialing issues need to be addressed?
- How will available staff in the area be coordinated? Is there a regional directory of staff and skills?

How can existing staff be retained?

- Keep staff healthy—antiviral, vaccine, and PPE availability and use issues
- Keep fear and rumors to a minimum by keeping communication open—how will this be done within your agency? Are existing internal and external communication channels sufficient? What about staff that refuse to care for influenza patients?
- Assist staff with family care issues (e.g., child care, health care). What exists? What can be offered in a crisis period?

What can be done if there are not enough staff to meet the need?

- Options: let mildly ill staff work in non-patient care settings, relax provider/patient ratios, other?

- What liability/malpractice issues must be addressed?

#### Miscellaneous staffing issues

- Impact of employee unions
- Mental health needs
- Role of voluntary and religious organizations
- How will home health, nursing homes, radiology, lab, and mortuary staff be maintained?

## 2. Space/Bed Needs

### How can existing beds be maximized?

- Local/regional inventory of available beds
- Options: cancel non-emergency and elective procedures; revise admission, transfer, and discharge criteria; enhance triage procedures
- Cohorting/isolation considerations
- Morgue capacity

### Can new space/beds be generated?

- Can new beds be added in existing facilities? How (supplies, staff, legal issues)?
- Can VA or DOD facilities be used?
- Can alternative care sites/ad hoc field hospitals be established? What sites? How? Under what conditions? Who would be treated here?

## 3. Supply Needs (e.g., PPE, routine medical supplies, influenza vaccine and antivirals)

### How can supplies be obtained?

- Options: shift from other areas; facility stockpile; strategic national stockpile
- Do all/many facilities buy supplies from same source? Can source handle this increase?
- Security issues may arise if supply sources are very limited. How will these be addressed?

### How will distribution/use of limited supplies be prioritized?

- Equitable/appropriate distribution of supplies among facilities and providers and to patients within facilities
- What are the priorities? Who will determine them? How will they be enforced?
- What about "anti-gouging" and existing applicable laws?

## 4. Other Issues

### Community/municipal services issues

- Contingencies for decrements in community and municipal services such as garbage collection and servicing of utilities (electric, gas and fuel delivery)

### Quarantine issues:

- How will quarantine-relevant issues affect your facility?
- Does your facility have a role in statewide quarantine plans?
- Do you have any existing plans for quarantine of highly infectious patients?

## **Scenario Outline**

This is a draft outline of the scenario that will be presented. As this scenario unfolds we will attempt to address a staged response to the issues raised above.

In *late September 2005*, an outbreak of unusually severe respiratory illness is identified in a small village in southern China. Viral isolates sent to the Centers for Disease Control and Prevention (CDC) in Atlanta are determined to be type A H7N3, a subtype never before isolated from humans.

By *mid-November*, human cases of H7N3 have been reported in Hong Kong, Singapore, South Korea, and Japan. This new virus is being transmitted from person to person and, although cases are reported in all age groups, young adults appear to be the most severely affected. There are no cases in the U.S. yet

Census 2003 population estimates for each of the 4 counties involved in this exercise (El Dorado County and Los Angeles County, California and Bernalillo and Chaves County, New Mexico) were entered into FluSurge and estimates of total county impact by week were generated assuming an 8 week outbreak with a 25% attack rate. These are conservative estimates.

*El Dorado County, California*

<b>Impact/Week</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
Weekly Admission	32	53	79	101	101	79	53	32		
Peak # admissions/day				16	16					
# flu patients in hospital	32	53	79	101	106	97	45	50		
# flu patients in ICU	5	10	16	20	22	22	17	12		
# flu patients on ventilators	2	5	8	10	11	11	9	6		
# deaths from flu			6	10	16	20	20	16	10	6
# flu deaths in hospital			4	7	11	14	14	11	7	4

*Los Angeles County, California*

<b>Impact/Week</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
Weekly Admission	1814	3023	4535	5744	5744	4535	3023	1814		
Peak # admissions/day				895	895					
# flu patients in hospital	1814	3023	4535	5744	6035	5556	4299	2835		
# flu patients in ICU	272	577	886	1170	1267	1232	979	676		
# flu patients on ventilators	136	289	443	585	633	616	490	338		
# deaths from flu			341	569	854	1081	1081	854	569	341
# flu deaths in hospital			239	398	598	757	757	598	398	239

*Bernalillo County, New Mexico*

<b>Impact/Week</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
Weekly Admission	112	187	280	355	355	280	187	112		
Peak # admissions/day				55	55					
# flu patients in hospital	112	187	280	355	373	344	266	175		
# flu patients in ICU	17	36	55	72	78	76	61	42		
# flu patients on ventilators	8	18	27	36	39	38	30	21		
# deaths from flu			22	36	54	69	69	54	36	22
# flu deaths in hospital			15	25	38	48	48	38	25	15

*Chaves County, New Mexico*

<b>Impact/Week</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
Weekly Admission	13	21	32	40	40	32	21	13		
Peak # admissions/day				6	6					
# flu patients in hospital	13	21	32	40	42	39	30	20		
# flu patients in ICU	2	4	6	8	9	9	7	5		
# flu patients on ventilators	1	2	3	4	4	4	3	2		
# deaths from flu			3	4	6	8	8	6	4	3
# flu deaths in hospital			2	3	5	6	6	5	3	2

but public unease is growing because vaccine is not yet available and supplies of antiviral drugs are severely limited.

*Discussion—It's coming!* Would your organization do anything different now that a novel influenza that is efficiently transmissible from person to person is causing significant levels of disease in Asia? How will your community coordinate a pandemic response as it relates to managing unusually large number of patients?

In *early December*, the first H7N3 cases are identified in the U.S. By mid December local outbreaks have been reported in several major U.S. cities. It will be another month or two at the earliest until the first vaccine is available and, under the best of circumstances, it will be several months after that before there is enough vaccine for the entire population. General supplies of antivirals are nearly gone. There are no H7N3 cases in your community yet but the “worried well” are calling and visiting physicians’ offices, the health department, and emergency rooms at unusually high rates.

*Discussion—It's coming soon!* Are there additional things you would do now that the virus is in the U.S.? What will you do to manage the “worried well” in your community?

In *early January* the first H7N3 case in your community is identified and within a week multiple cases, including a school outbreak, are identified. Outpatient visits and cases requiring hospitalization are rapidly increases. There is still no vaccine. There is concern among some health care staff about coming to work for fear of being infected by ill patients and about leaving their families and sending their children to school/day care.

*Discussion—It's here!* What will you do differently now that the virus is in your community? What steps will be taken to ensure there are enough staff and supplies to keep the hospital functioning? What steps will be taken to free up beds?

By *late January*, your community is in the height of the first wave of the pandemic. Hospital capacity is being rapidly (if not already) exceeded. Critical supplies are depleted. There are not enough ventilators for all those who require breathing assistance. The number of deaths has overwhelmed the health care system’s morgue capacity.

*Discussion—It's bad!* What will you do now that hospital capacity is overwhelmed? How will shortages of ventilators and other critical supplies be handled? What can be done when the morgue is full?

### **Pandemic Impact**

FluSurge (<http://www.cdc.gov/flu/flusurge.htm>), a software program developed at CDC, estimates the impact of an influenza pandemic on various aspects of hospital surge capacity including influenza-related hospital admissions, number of influenza patients in the hospital/ICU/on ventilator, and influenza-related deaths. FluSurge makes the following assumptions:

1. Average length of hospital stay for influenza-related illness is 7 days.
2. Average length of ICU stay for influenza-related illness is 10 days.
3. Average length of ventilator usage of influenza-related illness is 10days.
4. An average of 15% of admitted influenza patients will need ICU care.
5. An average of 7.5% of admitted influenza patients will need ventilators.

# MEDICAL CAPACITY MANAGEMENT PROGRAM

Color-coded communication and collaboration methodology for safe and efficient practices in times of high demand.

## PART I - CRITERIA

Status:	GREEN	YELLOW	ORANGE	RED (DISASTER PLAN)
<b>Definition:</b>	Staffing, resources and bed availability match patient needs and there is ease in collaboration between all departments.	A state of early triggers identifying a need to initiate early interventions to avoid escalation and meet patient demand.	Escalating demand without available capacity and/or resources. Aggressive action is required to avoid declaring internal disaster.	Deployment of internal disaster plan is required. Will take many hours of intervention, perhaps days, to return to equilibrium.
<b>Census/Beds</b> (census number, number of available beds, procedures, visits, other volume indicators)	<b>CRITERIA</b> - Inpatient beds avail $\geq 8$ - $\geq 2$ ICU beds avail. - Identified discharges - Post-ops have tentative bed assignments	<b>CRITERIA</b> - Empty inpatient beds < 8 - 1 ICU bed - Surgeries may be on hold - All post-ops do not have bed assigned. - Homecare/TCC/SNF's full/ unable to take patients	<b>CRITERIA</b> - 100% occupancy with temp use of unlicensed space. - Few identified discharges. - Surgeries rescheduled. - Diminished ER capacity due to holding multiple admits.	<b>CRITERIA</b> - > 100% occupancy with use of unlicensed space - No or few identified discharges - ER full, holding multiple admits - Surgeries cancelled
<b>Acuity</b> (special patient needs, STAs, special circumstances)	- Manageable number of special needs patients (see "yellow") allowing needs to be met without stretching resources.	- Multiple special needs patients such as: - mental/behavioral health - isolation/precautions - dialysis, chemo, trauma - those that require private room	- Multiple special needs patients in multiple units - Emergency surgeries - ICU admits held in ED	- Multiple ICU admits and/or special needs patients held in ED - Emergency surgeries
<b>Resources</b> (Equipment, Supplies, Information system)	- Equipment & supplies avail. & in stock on units. - IS services running and support available. - All utilities functioning (pneumatic tube, phones, elevator, power, water, gases, answering service, etc.)	- Equipment & supplies limited &/or not accessible on unit within acceptable time frames. - Prolonged unscheduled IS downtime, or immediate post down-time affecting workload and/or communication. - Imaging/diagnostic equipment down - Failure of one or more utilities, although adequate back up in place	- Significant and prolonged equipment and/or supply shortages or prolonged delays - Severe pharmaceutical/blood shortage - Imaging/diagnostic/critical patient care equipment down/unavail. -- back up system is stretched - One or more utilities failed - Prolonged unscheduled IS downtime, or immediate post down-time affecting workload and interdepartmental communication.	- Key equipment & supplies unavailable. - Full IS downtime > 24 hrs impacting communication and workload without availability of adequate support - Multiple utility/power failures.
<b>Employees/Staffing</b> (Numbers of staff, required vs. actual, dept. vs. unfamiliar staff)	- Most departments meet staffing standards. - All acute units have sufficient licensed staff per staffing plan/PCS/ratios. May be "short" in support staff positions. - Staff may be avail. O/C	- Acute units staffed per staffing plan/PCS/ratios. - No staff O/C. - Multiple registry and/or unfamiliar/float staff scheduled. - Financial incentives may be in place - Some ancillary departments do not meet staffing standards.	- Multiple departments staffed below staffing plan/PCS/ratios. - No additional staffing resources available (registry, other depts) - Financial incentives not effective. - Managers on units with some not available. - Financial incentives in place	- Multiple departments staffed critically below staffing plan/PCS/ratios. - No additional staffing resources available (registry, other depts) - Financial incentives not effective. - All management/non-direct care staff reassigned to patient care/ clinical areas with some not available.

## PART II – INTERVENTIONS

For every criteria there must be a “call to action” or intervention.

These are the required responses to achieve success in reducing the status to next lower level.

Status:	GREEN	YELLOW	ORANGE	RED (DISASTER PLAN)
<b>Definition:</b> Staffing, resources and bed availability match patient needs and there is ease in collaboration between all departments.	<b>INTERVENTIONS</b> <ul style="list-style-type: none"> <li>Beds cleaned within 30 minutes or less</li> <li>Consider identifying surgeries that may be placed “on hold” if status progresses</li> <li>Bed all appropriate patients together in double rooms.</li> </ul>	A state of early triggers identifying a need to initiate early interventions to avoid escalation and meet patient demand.	Escalating demand without readily available capacity and/or resources. Aggressive action is required to avoid system overload and gridlock.	Deployment of organization disaster plan required. Will take many hours of intervention, perhaps days to return to equilibrium.
<b>Census/Beds</b> (census number, number of available beds, procedures, etc.)	<b>INTERVENTIONS</b> <ul style="list-style-type: none"> <li>Assign specific post-op bed just prior to/during procedure</li> <li>Surgical and other appropriate female patients placed in OB beds</li> <li>Identify surgeries for potential “hold” or outpt.</li> <li>All outpatients in outpt treatment areas.</li> <li>Home Care evaluate external referrals</li> </ul>	<b>INTERVENTIONS</b> <ul style="list-style-type: none"> <li>Consider increased accommodation in unlicensed space (117, 118, corridors, PACU, etc.) for inpatients</li> <li>Consider rescheduling non-emergent surgeries, procedures, treatments</li> <li>Consider using chair area of ambulatory surgery or other for “discharge area”</li> <li>Activate Marketing staff for Service Recovery efforts.</li> <li>Home Care not accept external referrals</li> </ul>	<b>INTERVENTIONS</b> <ul style="list-style-type: none"> <li>Consider use of TCC and other non-hospital areas for acute care inpatients</li> <li>Cancel elective surgeries</li> </ul>	<b>INTERVENTIONS</b> <ul style="list-style-type: none"> <li>Consider use of TCC and other non-hospital areas for acute care inpatients</li> <li>Cancel elective surgeries</li> </ul>
<b>Acuity</b> (special patient needs, STATs, special circumstances)	<ul style="list-style-type: none"> <li>STATs ordered appropriately</li> </ul>	<ul style="list-style-type: none"> <li>Surgical and other appropriate female patients placed in OB beds</li> <li>Mobilize Social Workers from other sites to assist with special needs</li> </ul>	<ul style="list-style-type: none"> <li>Consider expanded use of safety attendants</li> <li>Consider runners for labs, etc.</li> <li>Consider use of both Social Workers</li> </ul>	

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<b>Definition:</b> Staffing, resources and bed availability match patient needs and there is ease in collaboration between all departments.	<b>INTERVENTIONS</b> <ul style="list-style-type: none"> <li>Minimize # of late trays</li> <li>Call diet orders timely</li> <li>Evaluate availability of IVACs, pillows, linen in relationship to potentially climbing census.</li> </ul>	<b>INTERVENTIONS</b> <ul style="list-style-type: none"> <li>Gather spare equipment (IV Poles, pumps, etc) and send to MM</li> <li>MM rents additional equipment</li> <li>Additional PRN stock/PAR by MM</li> <li>Add linen restock</li> <li>Send spare guernseys to area of need</li> <li>Increase trash empty</li> <li>ER notify dietary if patients need trays.</li> </ul>	<b>INTERVENTIONS</b> <ul style="list-style-type: none"> <li>Buyers/fiscal implement local shopping/immediate purchase for needed supplies.</li> <li>Consider call in of “on call” IS tech.</li> <li>Consider call in additional Materials, Engineering at night.</li> </ul>	<b>INTERVENTIONS</b> <ul style="list-style-type: none"> <li>Implement utilities failure plan</li> </ul>
<b>Resources</b> (Equipment, Supplies, Information system)	<b>INTERVENTIONS</b> <ul style="list-style-type: none"> <li>Minimize # of late trays</li> <li>Call diet orders timely</li> <li>Evaluate availability of IVACs, pillows, linen in relationship to potentially climbing census.</li> </ul>	<b>INTERVENTIONS</b> <ul style="list-style-type: none"> <li>Gather spare equipment (IV Poles, pumps, etc) and send to MM</li> <li>MM rents additional equipment</li> <li>Additional PRN stock/PAR by MM</li> <li>Add linen restock</li> <li>Send spare guernseys to area of need</li> <li>Increase trash empty</li> <li>ER notify dietary if patients need trays.</li> </ul>	<b>INTERVENTIONS</b> <ul style="list-style-type: none"> <li>Buyers/fiscal implement local shopping/immediate purchase for needed supplies.</li> <li>Consider call in of “on call” IS tech.</li> <li>Consider call in additional Materials, Engineering at night.</li> </ul>	<b>INTERVENTIONS</b> <ul style="list-style-type: none"> <li>Implement utilities failure plan</li> </ul>
<b>Employees/Staffing</b> (Numbers of staff, required vs. actual, # unfamiliar staff)	Critical Care on call Consider MS RN on call	<ul style="list-style-type: none"> <li>Send float staff to other areas</li> <li>Call registry staff off, staff on PTO</li> <li>Consider financial incentives</li> <li>Request additional staff from all sites/ departments to perform needed duties (see list)</li> </ul>	<ul style="list-style-type: none"> <li>Assure financial incentives in place</li> <li>Identify clinical staff who typically work in other roles for potential deployments (Health Promotions, Wound Care, Education, etc.)</li> <li>Managers in-house – called back from PTO, days off</li> <li>Open “personnel pool”</li> </ul>	<ul style="list-style-type: none"> <li>Consider mandatory overtime.</li> </ul>

## STAFFING NEEDS DURING CAPACITY MANAGEMENT YELLOW – ORANGE - RED

Identified support actions that will be provided by my department to other departments/services to achieve success.

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<b>Employees/Staffing,</b> continued	<ul style="list-style-type: none"> <li>• Couriers</li> <li>• Runners</li> <li>• Locate and send/deliver equipment/supplies</li> <li>• Trash emptying</li> <li>• Linen restocking</li> <li>• Passing trays</li> <li>• Calls to families to pick up patients</li> <li>• Let patients know reason for delay and expected time of service</li> <li>• Answer patient call lights and provide info.</li> <li>• Answering phones</li> <li>• Receiving and communicating FAXes, printed results</li> <li>• Misc. clerical functions</li> <li>• Consider additional PBX help</li> </ul>	<p style="text-align: center;">+</p> <ul style="list-style-type: none"> <li>• Facilitate personnel pool</li> <li>• Call in staff to assist</li> <li>• CAS, IS/Education staff to assist with nursing/needs</li> <li>• Patient transport</li> <li>• IS available in house</li> <li>• Engineering available in house</li> <li>• Bio-med available in house</li> <li>• Formal communication to patients that there will be delays</li> <li>• Specimen transport to alternate testing site</li> <li>• Dishwashers</li> </ul>	<p style="text-align: center;">+</p> <p style="text-align: center;">As determined per disaster plan</p>	