

Pandemic Influenza: Tackling the Tough Issues

Defining the Response

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Clinical Challenges of Influenza

- Spread by the respiratory route
- Coughing & sneezing
- Nonspecific signs and symptoms
- Poor sensitivity of clinical findings



Man Sneezing
www.dhs.ca.gov



Presentation of Bird & Swine Flu

Initially nonspecific and similar to currently circulating human flu virus subtypes

- Fever - Lethargy - Inappetance
Cough - Runny Nose - Sore throat -
Nausea - Vomiting - Diarrhea



Presentation of Bird & Swine Flu . . .

- Difficult to predict who will progress to severe disease



Bird Flu Victim
www.quepasa.com



Roles of the Emergency Response Community

- Public Health
- Fire
- EMS
- Hospital
- Emergency Management



San Diego Police Car
www.wmo.ch/



Roles of the Emergency Response Community . . .

- Police
- Veterinarians
- Private Industry



San Diego Police Car
www.wmo.ch/



Social Distancing

- Close schools
- Limit public gatherings
- Cancel public events



Washington National Cathedral
www.cathedral.org



Social Distancing . . .

- Travel restrictions
- Extend business hours
- Impose *snow days*



Washington National Cathedral
www.cathedral.org



Contact Avoidance

- Evidence that influenza transmission can occur across long distances through travel



Wedding in Asia During
SARS Outbreak
www.koreanmedicine.net

Contact Avoidance

- Transmission may occur at shorter distances through inhalation of small-particle aerosols



Isolation

Isolation—separation, during the period of communicability, of a person infected with a communicable disease, in a place and under conditions to prevent direct or indirect transmission of an infectious agent to others

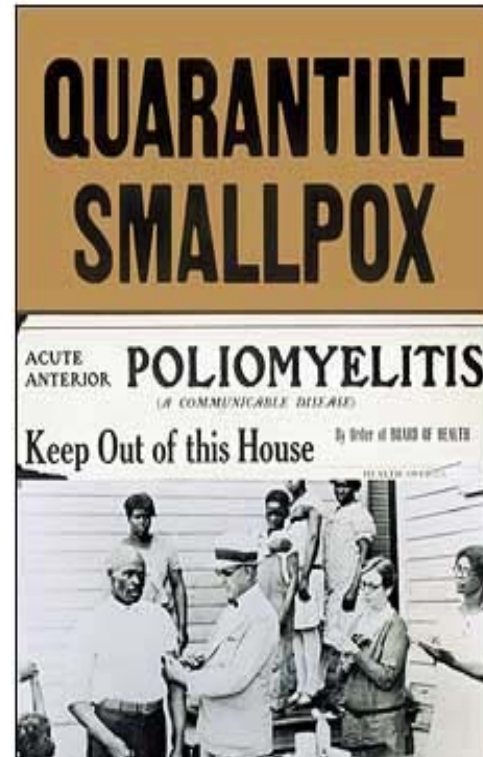


Improvised Isolation Room
AP Photos



Quarantine

Quarantine—
restrictions, during or
immediately prior to a
period of
communicability, of
activities or travel of an
otherwise healthy
person who likely has
been exposed to a
communicable disease



Smallpox Quarantine
Poster

Courtesy of U.S
Department of Health
and Human Services



Quarantine

The restrictions are intended to prevent disease transmission during the period of communicability in the event the person is infected



Smallpox Quarantine Poster

Courtesy of U.S Department of Health and Human Services



The University of North Dakota School of Medicine & Health Sciences



Antiviral Drugs

Used for prophylaxis or treatment:

- Amantadine (Symmetrel®)
- Rimantidine (Flumadine®)
- Oseltamivir (Tamiflu®)
- Zanamivir (Relenza®)



Tamiflu®
www.survivetheflu.com



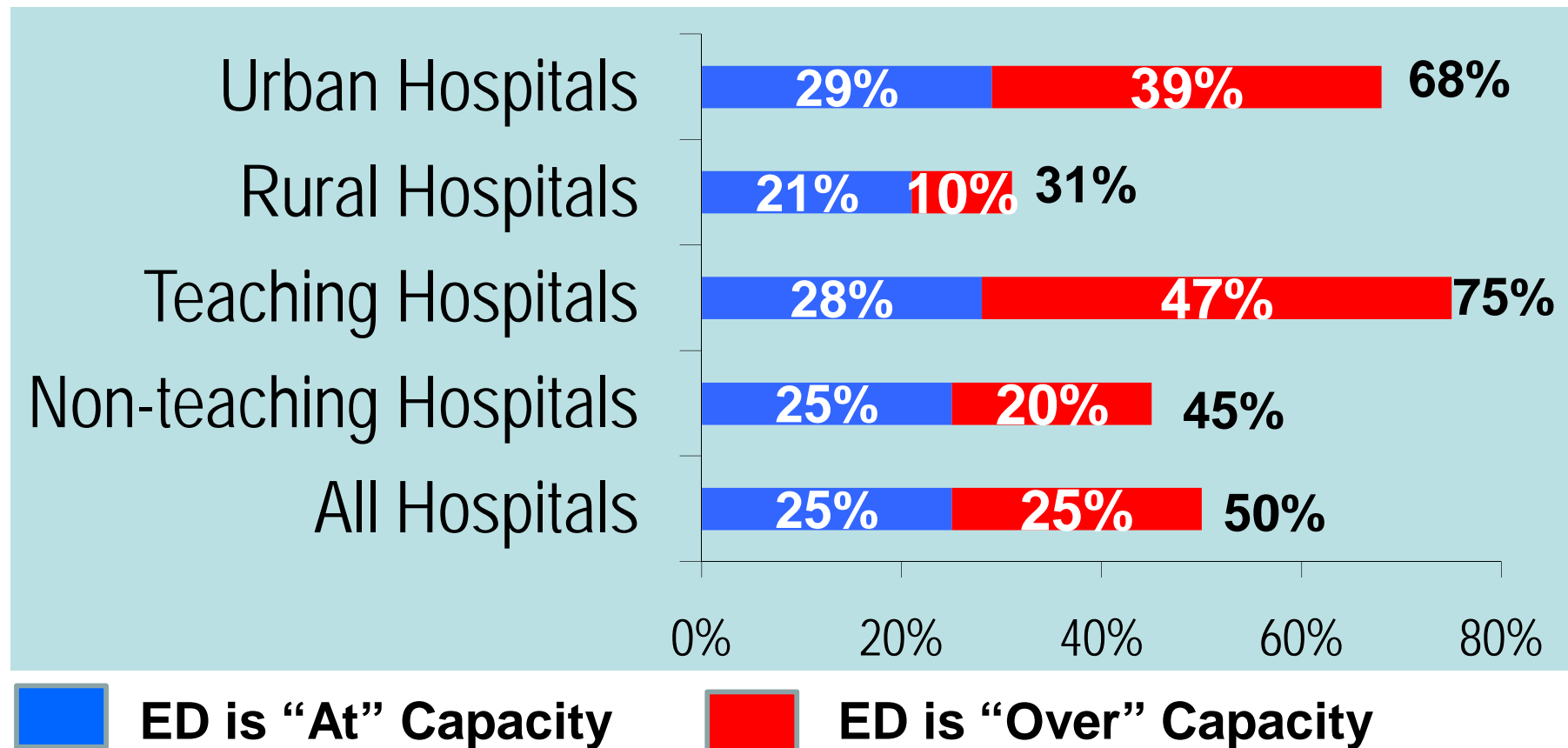
Community Wide Issues

- Greatest secondary hazard will be the problems caused by shortages of medical supplies, equipment, hospital beds, and healthcare workers
- Need a detailed system for allocating resources

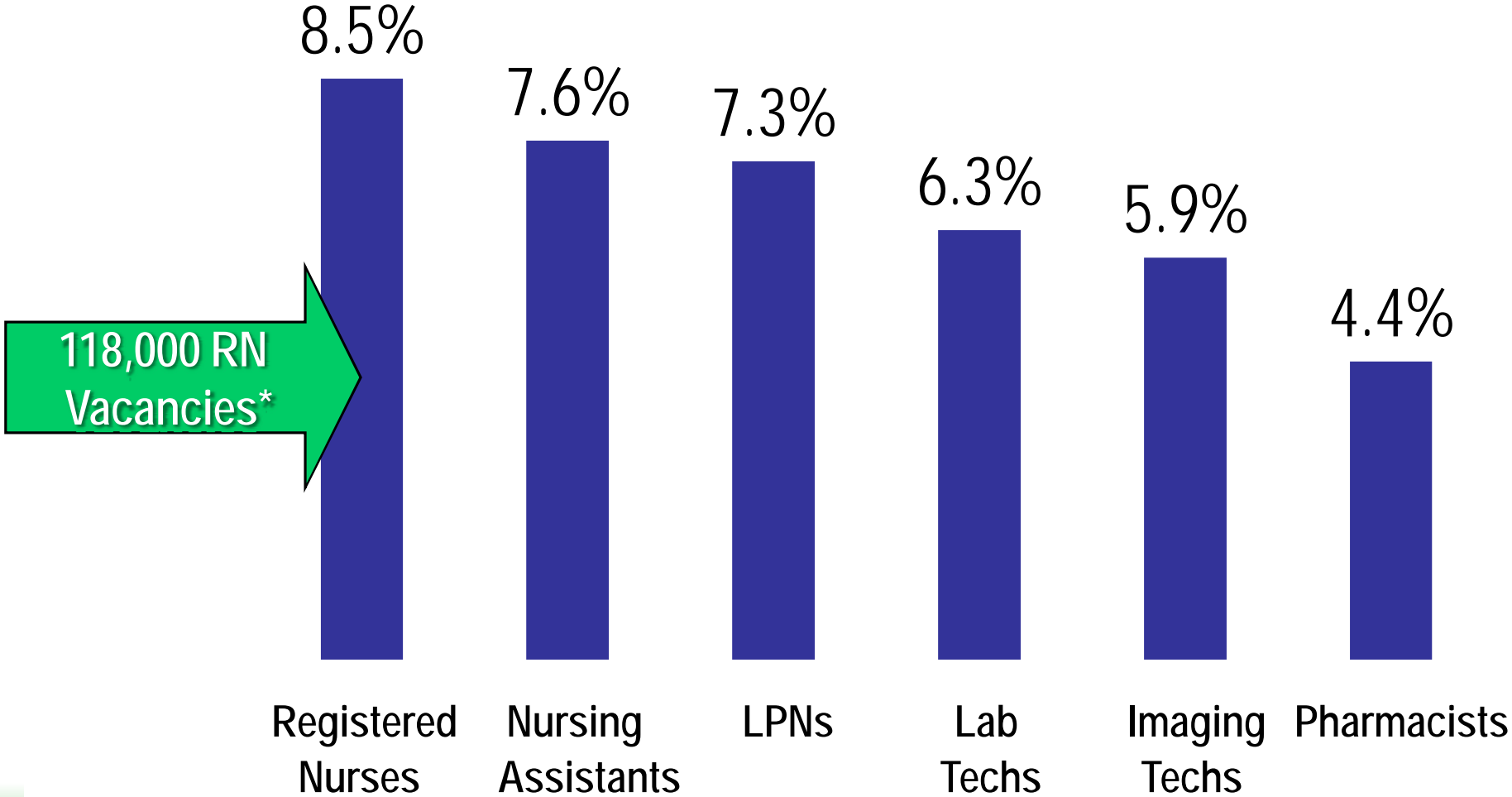
To solve this, we need a bottom up approach



Percent of Hospitals Reporting ED Capacity Issues by Type of Hospital



Vacancy Rates for Selected Hospital Personnel – 12/2005



Surge Capacity Prediction

Table 1. Number of Episodes of Illness, Healthcare Utilization, and Death Associated with Moderate and Severe Pandemic Influenza Scenarios*

Characteristic	Moderate (1958/68-like)	Severe (1918-like)
Illness	90 million (30%)	90 million (30%)
Outpatient medical care	45 million (50%)	45 million (50%)
Hospitalization	865,000	9,900,000
ICU care	128,750	1,485,000
Mechanical ventilation	64,875	742,500
Deaths	209,000	1,903,000

*Estimates based on extrapolation from past pandemics in the United States. Note that these estimates do not include the potential impact of interventions not available during the 20th century pandemics.

Source: HHS Pandemic Influenza Plan



Challenges of Medical Surge

- Facilities
- Personnel
- Standards of Care
- Equipment & Supplies
- PPE



Ticket area at the Louis
Armstrong International Airport,
NO

http://www.airportbusiness.com/article/photos/1126026661046_090605d.jpg



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Health Care Workers

- Protection of families
- Critical workers may not be available for duty
- Over 40% of the SARS infections in Toronto were health care workers



Health Care Worker
Wearing PAPR for
Demonstration
www.cdc.gov

