Pandemic Response: Will Communications Make a Difference?

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Public Health Service Region X
Objectives

• Discuss the challenges of an infectious disease emergency such as Pandemic Influenza.

• Explore the communication challenges that may result from such an emergency.

• Examine ways for communication specialists to assist in an infectious disease emergency.
FIGURE 1. Crude death rate* for infectious diseases — United States, 1900–1996†

*Per 100,000 population per year.
Leading causes of death worldwide (estimates for 2002). Nearly 15 million (>25%) of the 57 million annual deaths worldwide are caused by infectious disease.
Figure 6.2. U.S. Natural Disasters that Caused the Most Death and Damage to Property in Each Decade, 1900-2005, with 2004 Major Hurricanes, September 11th Terrorist Attacks, and Selected National Planning Scenarios. Damage in Third Quarter 2005 dollars.
Pandemic Waves of Spanish Influenza 1918-1919
SARS

• November 2002 to June 2003 outbreak
  - 8098 cases (2 US cases with labs)
  - 774 deaths
  - 29 countries
Nov 2002 to 2/20/03

300 Sick
5 Dead
WHO Alert on 2/26/03
Vietnam - 20 cases
Hong Kong - 50 cases

3/15/03
11 new countries impacted

Hong Kong - 123 cases

9 countries

3/19/03
4/1/03

1700 total cases
62 total Deaths
Hong Kong - 200 cases
China 34 deaths
16 countries
2700 total cases
106 total deaths
Hong Kong - 970 cases and 27 deaths
20 countries

4/10/03
4/21/03

3000 total cases
150 total deaths
26 countries
U.S. SUSPECTED SARS CASES AS OF MAY 6, 2003

TOTAL = 320

- Asteroid Impact
- Gamma Ray Bursts
- Supervolcano
- Global Pandemic
- Giant Solar Flare
- Nuclear Terrorism
- Machine Rebellion
- Alien Invasion
- Global Warming
- Mass Extinction
U.S. Apocalyptic Vulnerabilities

- Mountain West insufficiently shielded against direct comet strike
- California mentally unfit to withstand sub-50° temperatures of Global Ice Age
- Meat-dependent Midwest would almost certainly starve in event of pan-species extinction
- Direct solar gamma-ray burst would destroy non-reflective portions of Eastern Seaboard
- Texas actually fairly well-prepared for anything that can be shot at or run over by a truck
- Over-preparedness for Rapture in Deep South has led to shortage of nuclear-winter supplies
The LAST TOWN on EARTH

A Novel

Thomas Mullen

Fatal Contact: Bird Flu in America
Tuesday, May 9 at 8/7c
Starring Joely Richardson, Stacy Keach, Ann Cusack, Justina Machado, Scott Cohen and David Ramsey

HHS Viewer Guide to 'Fatal Contact: Bird Flu in America'
Frequently Asked Questions About Bird Flu

United States, Department of Health & Human Services
Leading America to Better Health, Safety and Well-Being
Packaged Disaster Hospitals

Take a Lesson from Grandma's Pantry...
make an emergency Preparedness Plan

For further information contact your County Extension or Civil Defense Office

2001 CD Museum
Operation Greenlight
The Public Message for Everyone

Prepared
Preparanoid
What’s all the fuss about?
FIGURE 1. Crude death rate* for infectious diseases — United States, 1900–1996†

*Per 100,000 population per year.
Remember these?

- Legionnaires’ Disease
- Swine Flu
- Ebola Virus
- SARS
- Toxic Shock Syndrome
- Legionella & Legionnaires’ Disease
- United States Department of Health & Human Services
Influenza: Scary Facts

• In 1918, the so-called "Spanish flu" killed 675,000 Americans — more than half as many people as died on all battlefields in the 20th Century combined.

• Estimated 40-50 million deaths worldwide from the 1918 influenza pandemic.

• Influenza pandemics have occurred for hundreds of years—three in the 20th Century (1918, 1957, 1968).

• “Bird flu” (A/H5N1 strain) is now spreading rapidly among birds—and it is a relative of the Spanish flu virus.

• Among persons infected by A/H5N1, high mortality rate among previously healthy children and young adults.

• Most “conditions” for a pandemic have been met.
Influenza: Not-So-Scary Facts

• There is currently no pandemic of H5N1 (avian flu-derived) human influenza.

• 1918 all-infectious-disease US mortality rate of ~950/100,000 people means >99% of Americans survived.
  - Of those infected in U.S., influenza death rate ~2.5%.

• Other 20th Century pandemics much less severe than 1918 pandemic: ~50 (1918) vs. 2 (1957) vs. 1 (1968) million deaths.

• PH authorities have been working hard to improve preparedness for several years now.
Medical Countermeasures for Pandemic

• Medications
  - Availability
  - Effectiveness
  - Prophylaxis vs. Treatment
  - Speed of Delivery
  - New Drug Development

• Vaccine
  - Availability
  - Production Capacity
  - Dose Sparing Technology
  - New Target Antigens
Disease Control Strategies

• Isolation (NOT Quarantine)
  - In hospitals?
    • Just-in-time competitive spirit
    • Alternative Care Centers
  - At home?
    • Sick People Stay Home!
    • 59 million Americans have no sick leave
Disease Control Strategies

• Large Scale Quarantine Measures
  – “Forced isolation and quarantine are ineffective and impractical.” - WHO
  – The ethical considerations of forced confinement of sick people with well.
  – Caring for confined quarantined populations puts and added burden on a stressed system.
Disease Control Strategies

• Voluntary Home Quarantine Measures
  - Sounds logical, but..........can it be executed?
  - People in congregate living arrangements such as college dorms?
  - Lack of sick leave, home support and supplies to stay at home.
  - Ethical issues of exposing healthy household members to the infection.
Disease Control Strategies

• Protective Sequestration
  – Staying at home to get away from sick people.
    • Eg. School closures, Telework
  – Will these strategies work?
    • Will people stay home?
    • Will people bring infections to uninfected people?
Disease Control Strategies

• Social Distancing
  - School Closure
    • Workforce Impact
    • Nutritional Impact
  - Prohibition on Social Gatherings
  - Travel Restrictions
  - Maintaining Personal Distance
  - Personal Protective Equipment
Liberty Loan Parade
September 28, 1918
Weekly mortality data provided by Marc Lipsitch (personal communication)

1918 Death Rates: Philadelphia v St. Louis

Date

Philadelphia

St. Louis
Disease Control Strategies

Consistent Public Messaging
Changing Behaviors
What Can Be Done Now

Challenges and Preparation -- Individuals and Families

As you plan, it is important to think about the challenges that you might face, particularly if a pandemic is severe. It may take time to find the answers to these challenges. Below are some situations that could be caused by a severe pandemic and possible ways to address them. A checklist and fill-in sheets for family health information and emergency contact information have been prepared to help guide your planning and preparation.

Please note that documents in PDF format require Adobe's Acrobat Reader.

- Checklist, Guide, and Information Sheets
  - Personal Planning Checklist
Andy’s Four Big Concerns about Pandemic Response in the U.S.

1. What will be the extent of social disruption?
2. What will be the capacity of families and communities to come together to support one another?
3. How will we support the “special populations” living amongst us?
4. Will our infrastructure withstand the change in the way we do business in a pandemic?
Social Disruption

• Plan for the disruption of usual services; banking, healthcare, education, restaurants, and government.
• Public gathering events will be disrupted including school, church, and volunteer gatherings.
• Personal income may be impacted.
Community and Family Capacity

Since 1918:

• Family structure in the US has become much more geographically dispersed.

• Extended family relationships have become less connected.

• Community identity is less intimate and supportive.

• Sense of family and societal responsibility for mutual support has changed.

• Growing number of disenfranchised members in our society.
Growing Number of “Special Populations”

• Elderly
• Medically fragile.
  – Technologically dependent
  – Immunocompromised
• Congregate care living populations.
  – Nursing homes
  – Senior Group Homes
  – Assisted Living Facilities
Will our infrastructure survive?

• Public Utilities
• Transportation Sector
• Healthcare Sector
• Finance Sector
• Food and Agriculture Sector
• IT and Communications Sectors
  - Phone
  - Internet
National Economic and Social Stability

Postal and Shipping
Healthcare
Energy
Transportation
Emergency Services
Food and Ag
Energy
Commercial Facilities
Chemical
Communications
IT
Water
What Is Your Country

Plagemic, n.

An uncontrolled outbreak of planning triggered by identification of plausible new ways to die.

Main symptoms: desire to hold press-conferences, followed by either mass inoculation or compulsive stockpiling.

The best way to avoid being embroiled in a plagemic is to stand aside and graciously permit more worried people to do the work.

OH MY GOODNESS WE COULD ALL DIE!

WE NEED TO WRITE AN ACTION PLAN WITH TRIPLE REDUNDANCY CONTINGENCY MEASURES.

WHAT TO HAVE FOR LUNCH??
Will The Telephone and Internet Survive?
Modeling has shown that:

• If 30% of the population adopted Voluntary Protective Home Isolation for 8 to 10 weeks this measure will reduce by one-half the number of people infected

• If 40% stay at home, infections decrease by two-thirds

• The earlier individuals start staying at home, fewer people will become infected overall

• Technology becomes an enabling factor in such instances
Social/family interaction and support relies on...

- Adequate in-home communications
- Trusted information sources
- Entertainment and education for household
- Connectivity to others

- Such activities are dependent on the availability of telecom systems and Internet access
<table>
<thead>
<tr>
<th>Sector</th>
<th>Total</th>
<th>Tier 1</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banking &amp; Finance</td>
<td>6,000,000</td>
<td>349,500</td>
<td>5.8%</td>
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<tr>
<td>Chemical</td>
<td>1,825,300</td>
<td>161,309</td>
<td>8.8%</td>
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<tr>
<td>Commercial*</td>
<td>19,872,800</td>
<td>42,000</td>
<td>0.2%</td>
</tr>
<tr>
<td>Communications</td>
<td>1,818,622</td>
<td>396,097</td>
<td>21.8%</td>
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<tr>
<td>Electricity</td>
<td>1,600,000</td>
<td>50,000</td>
<td>3.1%</td>
</tr>
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<td>Emergency Services</td>
<td>2,257,419</td>
<td>1,997,583</td>
<td>88.5%</td>
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<tr>
<td>Food and Ag</td>
<td>22,072,000</td>
<td>500,000</td>
<td>2.3%</td>
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<tr>
<td>Healthcare</td>
<td>13,062,000</td>
<td>6,999,725</td>
<td>53.6%</td>
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<tr>
<td>Information Technology</td>
<td>8,494,000</td>
<td>692,800</td>
<td>8.2%</td>
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<tr>
<td>Nuclear</td>
<td>175,000</td>
<td>86,000</td>
<td>49.1%</td>
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<tr>
<td>Oil and Gas</td>
<td>1,444,740</td>
<td>223,934</td>
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<tr>
<td>Postal &amp; Shipping</td>
<td>1,720,000</td>
<td>115,344</td>
<td>6.7%</td>
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<td>Transportation</td>
<td>3,012,000</td>
<td>100,185</td>
<td>3.3%</td>
</tr>
<tr>
<td>Water and Waste</td>
<td>1,480,000</td>
<td>608,000</td>
<td>41.1%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>84,833,881</strong></td>
<td><strong>12,322,477</strong></td>
<td><strong>14.5%</strong></td>
</tr>
</tbody>
</table>

*Commercial sector total numbers do not include the 4 sub-sectors considered less critical in a pandemic.*
Essential Workers
Tier 1

• Emergency Services Sector
  – 1,977,583 (89%)
• Health Care Sector
  – 6,999,725 (53%)
• Information Technology Sector
  – 692,800 (8%)
• Communication Sector
  – 396,097 (22%)
Are there protocols today for promoting U.S. service provider (cable and telephone companies, “last-mile” providers, etc.) collaboration and coordination to preserve Internet access and limit overload?

- Who owns the internet?
- Can it be controlled?
- Rolling time periods for accessing the Internet
Who should establish user priorities and preferences?

- Should business have preference?
- What is “routine, low priority” traffic?
- Dedicated ISP for First Responders & critical infrastructure
If an Internet slowdown is experienced during an outbreak of Pandemic Flu rather than a complete halt....how will different computer programs and/or protocols be affected? (eg: E-mail versus Web-browsing versus VoIP?)
Are there alternatives to Telephone and Internet?
Pandemics Happen
Got any questions?