Center for Biosecurity
Resilient Health Systems as Told through Pandemic Flu

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From a health perspective, resilience to disasters and disease outbreaks is grounded in a (1) robust population and a (2) robust system for public health emergency management.
ROBUST POPULATION

“The health of a community before any crisis has a direct correlation to the magnitude of the health crisis after the event.”

LTG Russel L. Honoré, Commander, Joint Task Force, Katrina 2008
Groups who are routinely more susceptible to flu-related complications (e.g., pneumonia) that can lead to hospitalization and death are: the elderly, very young children, and people with compromised immune systems or chronic illnesses (e.g., diabetes, heart disease, asthma).
Steps to a healthier and more resilient population include promoting healthier lifestyles, investing in preventive care, and reversing health disparities.
ROBUST SYSTEM FOR PUBLIC HEALTH EMERGENCY MANAGEMENT

- Health Care System
- Public Health System
- Engaged Citizens
- Medical Countermeasures (e.g., vaccines, antibiotics, diagnostic tools)
- Interdependent Critical Infrastructure (e.g., energy, water, transport, telecom)
During Spanish flu’s peak in 1918, US doctors, nurses, and druggists struggled to provide care when the medical workforce itself was in short supply and the number of patients outstripped hospital beds.
Steps to a more resilient health care system—able to adapt to a mass casualty setting—include coalitions that plan together to harness and apply a community’s distributed medical resources.
Disease monitoring systems ("biosurveillance" systems) – imperfect in 1918 – help public health officials to determine if controls are working and to convey the "big picture" to providers and the public.
Steps to a more resilient public health system include *sustained* staffing and budgeting for state and local health agencies to meet national capability standards for preparedness, response, and recovery.
The public’s pandemic flu contributions include personal preparedness, mutual aid/volunteering, and weighing in on tough choices in advance.
Steps to a more resilient citizenry include enabling practitioners to work more closely and consistently with local residents as well as faith-based, community-based, and business organizations.
PANDEMIC CASE: MEDICAL COUNTERMEASURE ENTERPRISE

During the first flu pandemic in the 21st century, we were still relying on 1950s vaccine technology.

http://www.newson6.com/story/11357608/could-h1n1-vaccine-lead-to-paralysis

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Steps to a more resilient medical countermeasure enterprise include:

- Improved regulatory science to evaluate new drugs and technologies, and
- More infectious disease research (now undervalued by commercial markets).
In the fall of 1918, streetcar disruptions and tied-up telephone lines – due to a depleted workforce – hindered care providers in performing their duties.
Steps to more resilient critical infrastructure include…

Here, I’ll defer to my engineering colleagues on the panel.
RESILIENT HEALTH SYSTEMS:
KEY ELEMENTS

• Robust Population
• Robust PH Emergency Management System
  – Health Care System
  – Public Health System
  – Engaged Citizens
  – Medical Countermeasure Enterprise
  – Critical Infrastructure
Thank you.
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