Contemplating Pandemics:
The Role of Historical Inquiry in Developing Pandemic Mitigation Strategies for the 21st Century

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KEEP YOUR BED ROOM WINDOWS OPEN!
PREVENT INFLUENZA - PNEUMONIA - TUBERCULOSIS

ANTI-TUBERCULOSIS LEAGUE
OR BOARD OF HEALTH
Historical Models of Epidemic Structure
The Four Acts of an Epidemic Model
Act I: Progressive Revelation

“When leaving his surgery on the morning of April 16, Dr. Bernard Rieux felt something soft under his foot. It was a dead rat lying in the middle of the landing. On the spur of the moment he kicked it to one side and without giving it a further thought, continued on his way downstairs. Only when he was stepping out onto the street did it occur to him that a dead rat had no business to be on his landing…”

Act II: Managing Randomness

Bruegel, Pieter, the Elder. Triumph of Death. 1556.
Act III: Negotiating Public Response

The kind of "Assisted Emigrant" we cannot afford to admit.
Act IV: Subsidence and Retrospection

“This is the way the world ends
Not with a bang but a whimper”.

T.S. Eliot,
The Hollow Men, 1925
Major *Leit Motivs* of Pandemics Model

Influenza ward in AEF camp hospital no. 45, Aix de Bains, France. National Library of Medicine, A 6721.
Epidemics are almost always framed and shaped, sometimes advanced, and sometimes hindered by how a given society understands a particular microbe to travel and infect others.
The economic devastation typically associated with epidemics can have a strong influence on the public's response to a contagious crisis.

http://icf.som.yale.edu/nyse/images/TradingFloor3.jpg [accessed 09/08/06]
The movements of people and goods and the speed of travel are essential factors in the spread of pandemic disease.
Our fascination with the suddenly appearing microbe that kills relatively few in spectacular fashion too often trumps our approach to infectious scourges that patiently kill millions every year.
Widespread media coverage of epidemics is hardly new and is an essential part of any epidemic.
A dangerous theme of epidemics past is the concealment of the problem from the world at large.
One of the saddest themes of epidemics throughout history has been the tendency to blame or scapegoat particular social groups.
INFLUENZA
Spread by Droplets sprayed from Nose and Throat

Cover each COUGH and SNEEZE with handkerchief.
Spread by contact.
AVOID CROWDS.
If possible, WALK TO WORK.
Do not spit on floor or sidewalk.
Do not use common drinking cups and common towels.
Avoid excessive fatigue.
If taken ill, go to bed and send for a doctor.
The above applies also to colds, bronchitis, pneumonia, and tuberculosis.
The Power and Limits of Applying Historical Data to Contemporary Dilemmas
Emergency Hospital during influenza epidemic, Camp Funston, Kansas. [N.B., the head to foot bed arrangement of patients]. National Museum of Health and Medicine, Armed Forces Institute of Pathology, NCP 1603.
A Historical Assessment of Nonpharmaceutical Disease Containment Strategies Employed by Selected U.S. Communities During the Second Wave of the 1918-1920 Influenza Pandemic

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For access to the full report see, http://www.dtra.mil/ASCO/BirdFlu.cfm
Trudeau Tuberculosis Sanitarium, Saranac Lake, New York

Western Pennsylvania Institution for the Blind, Pittsburgh, Pennsylvania
U.S. Naval Training Station, Yerba Buena Island, San Francisco, California

Aerial view of San Francisco, California, and Yerba Buena Island showing construction of San Francisco Bay Bridge 1935.

Gunnison, Colorado

Postcard of Gunnison Valley, circa 1920
Historical Assessment of NPI Taken by the Fifty Most Populous Cities in the United States During the Second and Third Waves [Sept, 1918-April, 1919] of the 1918-1920 Influenza Pandemic

Center for the History of Medicine
The University of Michigan Medical School

Division of Global Migration and Quarantine,
U.S. Centers for Disease Control and Prevention
<table>
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<tr>
<th>The Fifty Most Populous Cities in the United States, circa 1918-1919</th>
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<tr>
<td><strong>New York</strong></td>
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<td><strong>Jersey City, NJ</strong></td>
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Menu of NPIs, circa 1918-1919

1. Making influenza a reportable disease
2. Isolating sick individuals
3. Quarantine of households with sick individuals
4. School closure
5. Protective sequestration of children or adults
6. Cancellation of worship services
7. Closure of public gathering places [e.g., saloons, theatres, etc.]
8. Staggered business hours to decrease congestion.
9. Mandatory or Recommended use of masks in public
10. Closing or discouraging the use of public transit systems
11. Restrictions on funerals, parties, and weddings
12. Restrictions on door-to-door sales
13. Community-wide curfew measures and business closures
14. Social distancing strategies for those encountering others
15. Public health education measures
Dependent Variables or Outcomes

- The number of influenza deaths per week per city (or by day, if available)

- The number of influenza cases per week per city (or by day, if available)
Study Questions

➢ Were NPIs effective in mitigating the impact of influenza?
➢ Which NPIs appear more effective than others?
➢ What factors promoted or detracted from the effectiveness of NPIs?
➢ Did timing and layering or combination of these NPI play a role?
➢ Were these NPI enacted properly, improperly, too late, or with inadequately enforced compliance or effective or ineffective leadership?
➢ Were the applied NPI appropriate for the specific communities under study?
➢ What historical lessons can we learn as we develop contemporary pandemic preparedness strategies today?
With masks over their faces, members of the American Red Cross remove a victim of the Spanish Flu from a house at Etzel and Page avenues in St. Louis. In 1918, the flu killed 50 million around the world, 675,000 in America and 3,000 in St. Louis. Post-Dispatch file photo.

Farmer Stephane Letue examines a chicken on a farm in Janze near Rennes in western France.
Acknowledgements

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