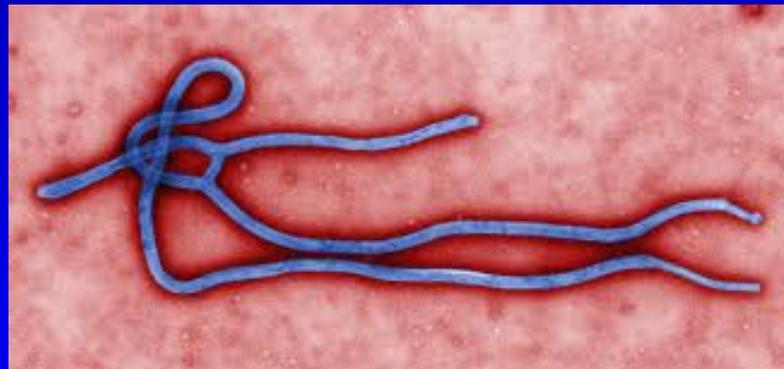


When Germs Travel

Contagious Themes Across Time in America

Presidential Commission for the Study of Bioethical Issues
Meeting on Ebola Virus Disease
February 5, 2014



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Major *Leit Motifs* of Epidemics and Pandemics



Pieter Bruegel the Elder
"Triumph of Death" (The Black Plague). 1556.

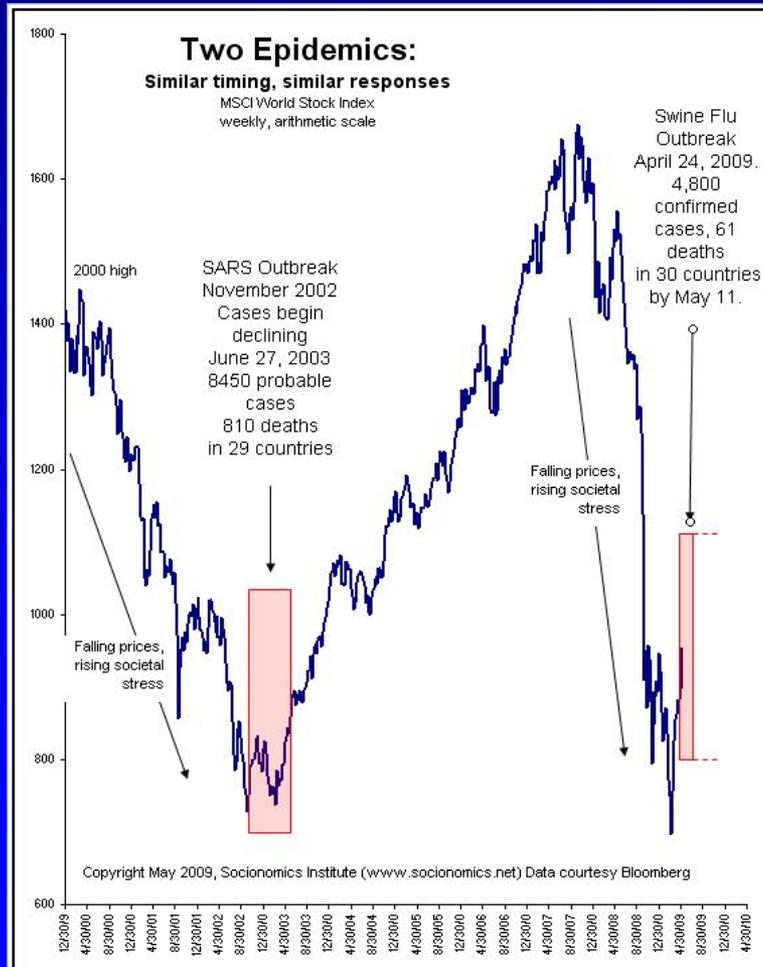


➤ Epidemics are almost always framed and shaped, sometimes advanced, and sometimes hindered by how a given society understands a particular microbe to travel and infect others.

"Doktor Schnabel von Rom" ("Doctor Beak from Rome").
 Engraving, Rome, 1656.



➤ The economic losses typically associated with epidemics can have a strong influence on public response.



➤ A dangerous theme of epidemics past, in terms of worsening spread, is their concealment, delays in reporting them, or their severity being ignored or underestimated by the world at large.



➤ The movement of people and other living beings and the speed of travel are essential factors in the spread of infectious disease.



Quotation of the Day

The New York Times

Quotation of the Day

OCT. 9, 2014

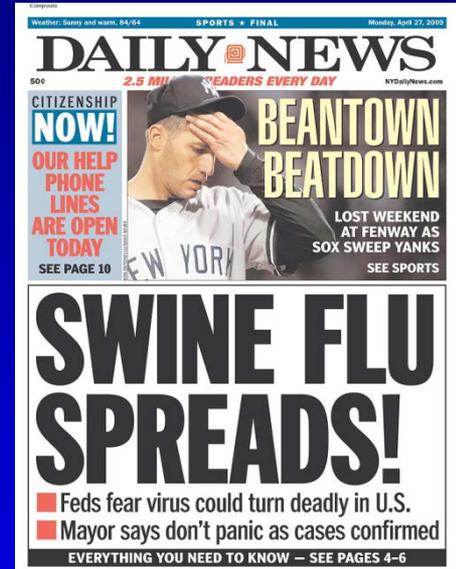
“Germs have always traveled. The problem now is they can travel with the speed of a jet plane.”

HOWARD MARKEL, a professor of the history of medicine at the University of Michigan, on the spread of Ebola beyond West Africa.

A version of this quote appears in print on October 9, 2014, on page A2 of the New York edition with the headline: Quotation of the Day.



➤ Our fascination with the suddenly appearing microbe that kills relatively few in spectacular fashion often trumps our response to infectious scourges that patiently kill millions every year.



The sudden appearance of an epidemic typically inspires rapt attention, panic and action. Once the crisis subsides, public attention wanes although the threat of contagion continues, especially among the world's poor.

Compare our response to severe acute respiratory syndrome, or SARS, with the more familiar germs that plague us daily. Compare it to the dangers of smoking or getting in a car and heading out on the road. Every life is precious, but when you look at the numbers, SARS just isn't as formidable a threat as we've made it out to be. Its death rate is far lower than that for AIDS or malaria; coronaviruses, like the one believed to cause SARS, tend to be most active in the winter and early spring.

In addition to taking the steps necessary to keep SARS at bay—watching out for new cases and isolating people who are contagious to others—we would do well to channel our energies into something more lasting: a permanent, integrated and accountable global public health system for the surveillance and prevention of the microbes that are certain to emerge in the future. Right now, worldwide accounting of disease is incomplete at best, hampered in large measure by sketchy reporting from developing countries. These gaps slowed our containment of SARS and allowed rumor to spread more rapidly than reliable information. When the facts are few, it's easy for fear to fill the vacuum.

Howard Markel, professor of pediatrics and communicable diseases at the University of Michigan, is author of the forthcoming "When Germs Travel."

THE EPIDEMIC SCORECARD

By Howard Markel and Stephen Doyle

Estimates of disease incidence and mortality are from the World Health Organization

2 MILLION DEATHS A YEAR
8 MILLION NEW CASES A YEAR, AND CLIMBING

ONE THIRD OF THE WORLD'S POPULATION IS INFECTED WITH

Tuberculosis

IN THE LAST HOUR, MORE THAN 200 PEOPLE HAVE DIED OF TUBERCULOSIS

EACH YEAR 1 PERCENT OF THE WORLD BECOMES INFECTED WITH THE TB GERM

INFECTIOUS DROPLETS TRANSMITTED BY BREATHING COUGHING SNEEZING EVEN SPEAKING

TO BE EFFECTIVE, TB DRUGS MUST BE TAKEN FOR SIX TO EIGHT MONTHS

DRUG-RESISTANT STRAINS ARE INCREASING (AND MULTIPLYING)

MORE THAN 100 DEATHS AN HOUR

BORNE BY MOSQUITOES

Medicines exist to fight many strains of the malaria parasite, but public health workers are concerned about drug-resistant forms of the disease. Prevention (mosquito control) is the most effective.

MALARIA

1 MILLION DEATHS A YEAR
300-500 MILLION NEW CASES A YEAR

1 MILLION DEATHS A YEAR / 10-30 MILLION NEW CASES A YEAR

HEPATITIS B VIRUS

puts you at high risk for cirrhosis, liver cancer, liver failure and death

TRANSMITTED VIA

- Mother to child at birth
- Unsafe injections or transfusions
- Sexual contact

No effective treatment. Vaccine can block chronic infection, but its high cost prevents its widespread distribution in poor nations.

DIARRHEAL DISEASES

(cholera, shigella, dysentery, typhoid, E. coli and others)

1.9 MILLION DEATHS A YEAR
 mostly infants and young children

2.7 BILLION NEW CASES A YEAR

Within the last hour, 200 people have died of these diseases

Transmitted by contaminated food or water

1.5 billion people do not have ready access to clean water

AIDS

3.1 MILLION DEATHS A YEAR
5.5 MILLION NEW CASES A YEAR

42 MILLION PEOPLE ARE H.I.V.-POSITIVE

IN THE LAST HOUR, MORE THAN 300 PEOPLE HAVE DIED OF AIDS

And...

Cardiovascular disease (heart attack and stroke) deaths: 17 million a year

Tobacco-related deaths: 3.5 million a year

Motor vehicle fatalities: 1.26 million a year

Measles

NEARLY 900,000 DEATHS A YEAR
30 MILLION NEW CASES A YEAR

ENTIRELY PREVENTABLE WITH A VACCINE THAT COSTS 26 CENTS AND HAS BEEN AVAILABLE SINCE 1963

mosquito-borne

Dengue Fever

24,000 DEATHS A YEAR
20 MILLION NEW CASES A YEAR

INFLUENZA

250,000 DEATHS A YEAR
3-5 million new cases a year

Entire world affected

YELLOW FEVER

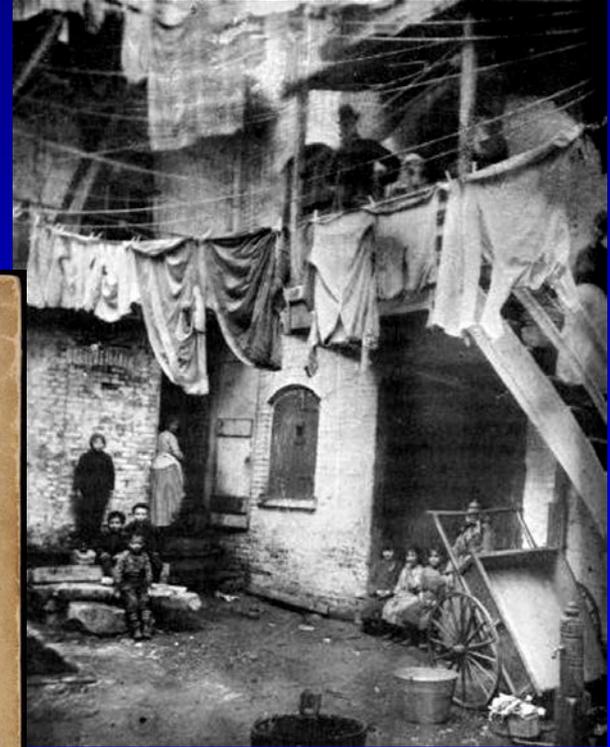
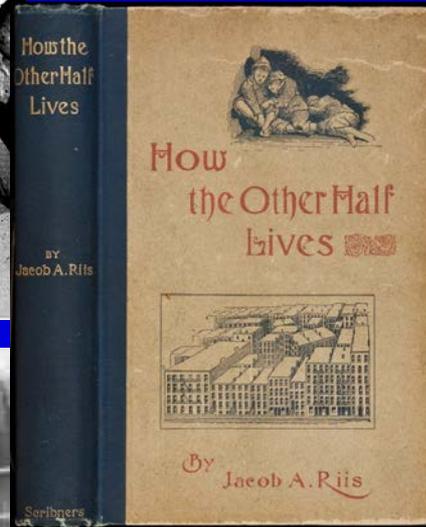
30,000 DEATHS A YEAR
200,000 NEW CASES A YEAR

SARS

353 DEATHS out of 5,462 cases in 180 days



➤ Poverty and its attendant evils often fuel the fire of an epidemic



➤ One of the saddest themes in the history of epidemics is the tendency to scapegoat or blame individuals or social groups for the importation of infection.



Judge, September, 1892



➤ **The Newcomer, the Marginalized, the Threat (real or perceived) of Contagion, and Laws Governing Migration, Individual Liberties, and Movement**



THE KIND OF "ASSISTED EMIGRANT" WE CAN NOT AFFORD TO ADMIT.

➤ Internecine Rivalries and Disputes Between Local, State and the Federal Government



TIME

Time Magazine,

November 7, 2005

Q: What will be the next deadly pandemic and how will it unfold?

A: "No one really knows what's going to happen. Anyone who says they do is either a fool or lying."

---Howard Markel, M.D., Ph.D.



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