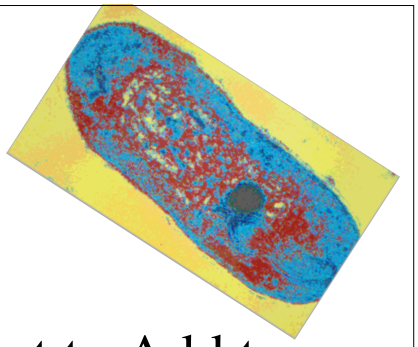
危機 Out of Danger Comes Opportunity



Now a New Threat to Add to Your Plan…

Infectious Diseases!

危機 Out of Danger Comes Opportunity

Agenda

- Definitions
- Diseases to worry about and plan for:
  - SARS
  - Tuberculosis
  - Hepatitis
  - Influenza
- Disease outbreak & pandemic planning

危機 Out of Danger Comes Opportunity

Definitions

危機 Out of Danger Comes Opportunity

Infectious Disease

- Any disease caused by
  - entrance, growth, and multiplication of bacteria, viruses or protozoans in the body.
  - It may not be contagious.
- Common examples now are:
  - Hepatitis
  - Sexually Transmitted Diseases (STDs)
  - Tuberculosis
  - Malaria
  - HIV/AIDS

危機 Out of Danger Comes Opportunity

Contagious Disease

- A disease *communicable* by contact with
  - infected person
  - some secretion of such a person
  - object touched by such a person

危機 Out of Danger Comes Opportunity

Communicable Disease

- An infectious disease transmissible (as from person to person) by
  - direct contact with an affected individual
  - individual's discharges
  - indirect means (as by a vector)

危機 Out of Danger Comes Opportunity

"Bug" Definitions

- Vector
  - An organism, such as a mosquito or tick, that carries disease-causing microorganisms from one host to another.
- Germ
  - A microorganism, especially a pathogen
- Pathogen
  - An agent that causes disease, especially a living microorganism such as a bacterium, virus, or fungus.

危機 Out of Danger Comes Opportunity

"Bug" Definitions

- Protozoan
  - Any of a large group of single-celled, usually microscopic, eukaryotic organisms, such as amoebas, ciliates, flagellates, and sporozoans. ***Giardia and Entamoeba histolytica are good examples of parasitic protozoans.***
- Bacteria
  - Any of the unicellular prokaryotic microorganisms of the class Schizomycetes, which vary in terms of morphology, oxygen and nutritional requirements, and motility, and may be free-living, saprophytic, or pathogenic in plants or animals.

危機 Out of Danger Comes Opportunity

"Bug" Definitions

- Viruses
  - Any of various simple submicroscopic parasites of plants, animals, and bacteria that often cause disease and that consist essentially of a core of RNA or DNA surrounded by a protein coat.
  - Unable to replicate without a host cell, viruses are typically not considered living organisms.

危機 Out of Danger Comes Opportunity

Pandemic & Epidemic

- A **pandemic** is a disease that affects people
  - over an ***extensive geographical area*** (from Greek *pan+demos,* all+people).
- An epidemic is an outbreak of a disease that
  - ***spreads more quickly***
  - ***more extensively*** among a group of people than would normally be expected

危機 Out of Danger Comes Opportunity

Health Screening

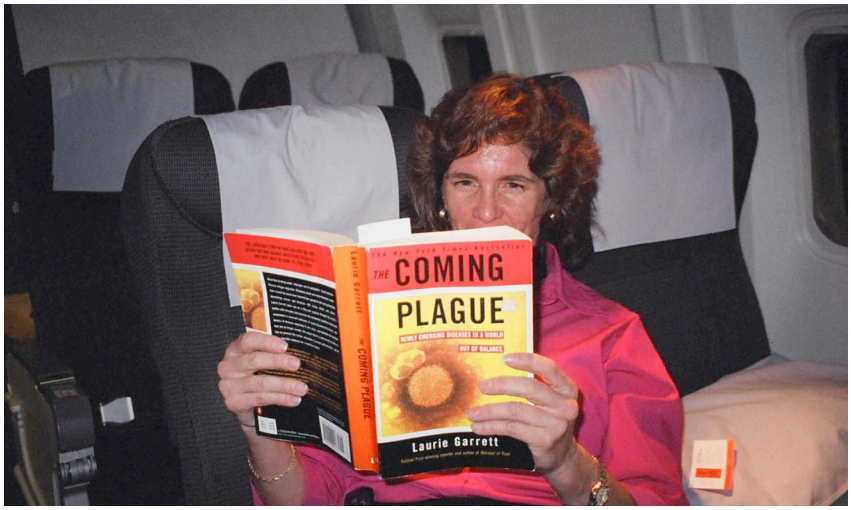
Don't worry, its just allergies!

危機 Out of Danger Comes Opportunity

Crowded planes?
No problem…

危機 Out of Danger Comes Opportunity

The Solution!



危機 Out of Danger Comes Opportunity

Diseases

- SARS
- Tuberculosis
- Hepatitis
- Influenza

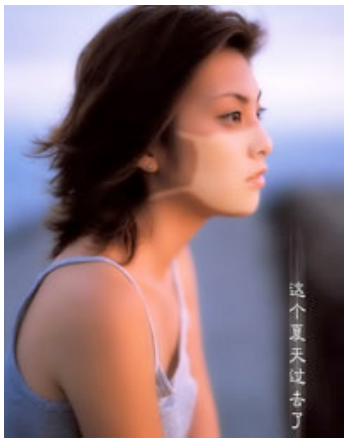
危機 Out of Danger Comes Opportunity

Severe Acute Respiratory Syndrome (SARS)

危機 Out of Danger Comes Opportunity

SARS

- Severe Acute Respiratory Syndrome is a coronavirus.
- Nov 2002 - July 2003- 8098 cases, 774 deaths, 9.6% fatality, 29 countries.
- Winter 2003 - 2004 - four cases in China, all survived.
- April 2004 - 2 cases, employees at a Biosafety Laboratory, both survived.
- Droplet spread, 3 feet, person-to-person contact.
- 2-10 day incubation, 2-3 week duration of illness.



March 9, 2005 www.ems-solutionsinc.com 18

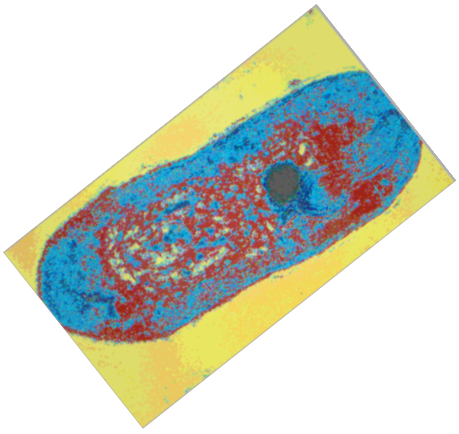
危機 Out of Danger Comes Opportunity

Tuberculosis

危機 Out of Danger Comes Opportunity

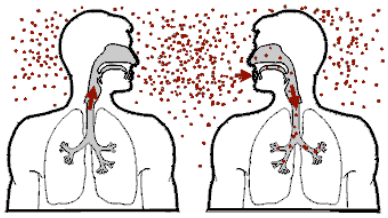
TB Statistics

- United States
  - 15 million infected in the US
  - 20,000 infections become active in US every year
- World
  - 2 billion infected
  - 3 million deaths annually
- Kills 60% of those not treated.
- When treated 90% of those with an active infection survive.



危機 Out of Danger Comes Opportunity

How is it spread?



- TB spreads from person to person through the air as a person with active TB coughs, sneezes or breaths - droplet spread.
- Since most infected people breathe out only a few bacilli with each breathe, it usually takes 1-2 months of exposure to spread to another person.

危機 Out of Danger Comes Opportunity

Diagnosis & Treatment

- Diagnosis
  - PPD skin test
  - Physical exam
  - Chest X-ray
- Treatment
  - Antibiotic therapy (through the entire course)
  - Usually after 2 weeks, no longer contagious

危機 Out of Danger Comes Opportunity

Prevention

- Adequate ventilation.
- Improving crowded conditions.
- Infected people covering their mouth and nose when sneezing or coughing.
- Identifying infected people early and getting them treatment.

危機 Out of Danger Comes Opportunity

Drug Resistant TB

- Researchers found rates of Multiple Drug Resistant (MDR)-TB are very high in several former Soviet republics.
  - Other countries include: China Ecuador, South Africa, Israel
- Reports estimates there are 300,000 cases world-wide.

危機 Out of Danger Comes Opportunity

Hepatitis

危機 Out of Danger Comes Opportunity

The Alphabet Soup of Hepatitis

- **Hepatitis A** - Caused by eating food/drinking water infected with HAV virus or during sex (oral/anal). Causes swelling/inflammation of liver, it doesn't lead to chronic, or life long, disease. Most have a full recovery.
- **Hepatitis B** - Caused by HBV virus . Spread by contact with an infected person's blood, semen, or other body fluid. And, it is a sexually transmitted disease (STD)

危機 Out of Danger Comes Opportunity

The Alphabet Soup of Hepatitis

- **Hepatitis C** - Caused by HCV virus. Spread the same way as hepatitis B. Like hepatitis B, causes swelling of the liver and can cause liver damage that can lead to cancer. Most people who have hepatitis C develop a chronic infection which may lead to a scarring of the liver, called cirrhosis.
- **Hepatitis D** - Caused by HDV virus. You can only get if you are already infected with hepatitis B. Causes liver swelling.

危機 Out of Danger Comes Opportunity

The Alphabet Soup of Hepatitis

- **Hepatitis E** - Caused by HEV virus. You get hepatitis E by drinking water infected with the virus. This type of hepatitis doesn't often occur in the U.S. It causes swelling of the liver, but no long-term damage. It can also be spread through oral-anal contact.

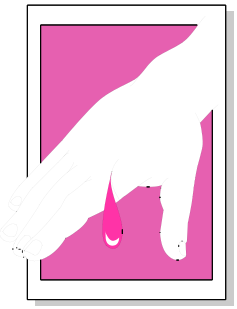
危機 Out of Danger Comes Opportunity

How is Hepatitis B spread?

- Infected blood or body fluids

Prevention

- Universal Precautions
- HBV Vaccine



March 9, 2005 www.ems-solutionsinc.com 29

危機 Out of Danger Comes Opportunity

Hepatitis B Vaccine

- The Bloodborne Pathogens Standard requires employers to offer vaccination at no cost to:
  - All workers covered by the regulation
  - Designated first aiders within 24 hours after responding to an event involving blood or other infectious body fluids during which an exposure has occurred
- Decline or Consent Form must be signed

March 9, 2005 www.ems-solutionsinc.com 30

危機 Out of Danger Comes Opportunity

Is Hepatitis vaccine a live virus?

- No, HBV vaccine is a noninfectious yeast based vaccine
- It is prepared from Recombinant yeast cultures rather than from human blood or plasma
- There is no risk of contamination, nor any chance of developing HBV from the vaccine

危機 Out of Danger Comes Opportunity

What does vaccination involve?

- Three injections in the arm
  - –second given one month after the first
  - –third given 6 months after the initial dose

- It is not known how long the immunity lasts
- Booster shots may be required at some point in the future

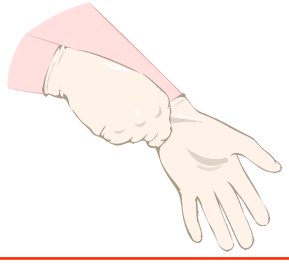
危機 Out of Danger Comes Opportunity

Guidelines for Infection Control

危機 Out of Danger Comes Opportunity

Guidelines for infection control

- Follow Universal Precautions: Treat all body fluids as potentially hazardous
- Apply a barrier dressing to all wounds--add more gauze if blood seeps through
- Minimize direct contact with body fluids--use approved gloves, CPR barrier



危機 Out of Danger Comes Opportunity

Infection control

- Wear appropriate protective clothing (Gloves/Mask/Gown)
- Avoid handling other equipment/objects with contaminated gloves
- Dispose of needles properly
- Wash hands after any exposure

March 9, 2005 www.ems-solutionsinc.com 35

危機 Out of Danger Comes Opportunity

Hand washing is one of the single most important means of preventing the spread of infection

March 9, 2005 www.ems-solutionsinc.com 36

危機 Out of Danger Comes Opportunity

"How To" Hand Washing

1. Wet hands with **warm water**.
2. Apply a generous amount of **soap** & lather hands well.
3. Rub hands together for **20 seconds**, paying special attention to the areas between fingers & under nails.
4. Rinse hands thoroughly with warm water.
5. Dry hands with a disposable towel
6. Use the disposable towel to turn off the faucet & open the door.

March 9, 2005 www.ems-solutionsinc.com 37

危機 Out of Danger Comes Opportunity

What is 20 seconds?

- Songs suggested by the CDC or "approved" to sing while washing for 20 seconds include…
  - Twinkle, Twinkle Little Star
  - Happy Birthday

- Twinkle, twinkle, little star,
- How I wonder what you are.
- Up above the world so high,
- Like a diamond in the sky.
- Twinkle, twinkle, little star,
- How I wonder what you are!

March 9, 2005 www.ems-solutionsinc.com 38

危機 Out of Danger Comes Opportunity

Personal Protection

- Universal precautions - always!
- Clean surfaces with 9 parts water, 1 part bleach.
- When dealing with the public (high risk individuals), if someone has *significant productive* cough - ask them to wear a mask. If they refuse, mask yourself.

危機 Out of Danger Comes Opportunity

Influenza

危機 Out of Danger Comes Opportunity

The Big One - Influenza

- Influenza is a highly contagious respiratory disease.
- Historical accounts go back to the 16th century in Italy
  - Influenza attributed to the "influence of the stars"
- Three types:
  - Influenza A- moderate to severe illness, affects people of all ages
  - Influenza B- mild to moderate illness, usually affects children
  - Influenza C- Mild illness, sporadic cases, minor outbreaks

危機 Out of Danger Comes Opportunity

Influenza Statistics

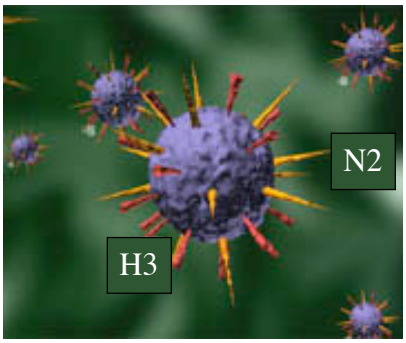
- During any given year, 10-20% of the world's population gets influenza.
- Influenza is associated with 500,000 to 1,000,000 deaths worldwide each year.
- In 2002 in the US, influenza resulted in 36,000 deaths and 114,000 hospitalizations.
- In unpredictable years 25% of the population get it.

Source- UCLA

危機 Out of Danger Comes Opportunity

Influenza A - A Tutorial

- Influenza A has two subtypes determined by proteins on the outer surface of the virus
  - Hemagglutinin (H) – helps virus attach to respiratory cells
  - Neuraminidase (N) – helps virus penetrate into the cells once it is attached.
- Influenza A is sub-typed by the H and N they possess,
  - An example a description of a subtype would be the H3N2 virus



March 9, 2005 www.ems-solutionsinc.com 43

危機 Out of Danger Comes Opportunity

Influenza- A Microbial Chameleon

- Influenza has thrived over the millennia by adhering to one simple principal- **adapt or die**.
- If this constant process of genetic shuffling didn't frequently result in new types of H or N, eventually many humans would become immune and the virus would die out.
- Therefore most of us will experience repeated Influenza infections in our lifetime.
  - Or, why you got the flu shot and still got the flu (it could also be another strain too!).

March 9, 2005 www.ems-solutionsinc.com 44

危機 Out of Danger Comes Opportunity

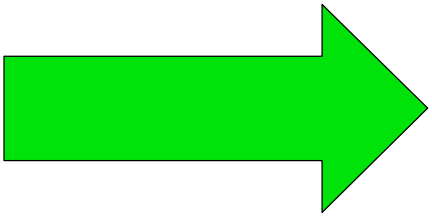
Imagine That You are a Influenza A Virus and You Want to Survive

- You're thinking…
  - Should I **Drift**?
  - **OR**
  - Shall I **Shift**?

危機 Out of Danger Comes Opportunity

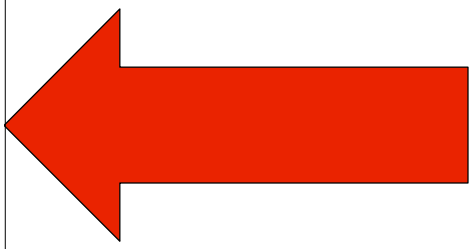
Antigenic **Drift**

- A subtle mutation within the **same** subtype.
- Can be associated with epidemics.
- These changes or drifts occur continually even within the same "flu season."



危機 Out of Danger Comes Opportunity

Antigenic Shift

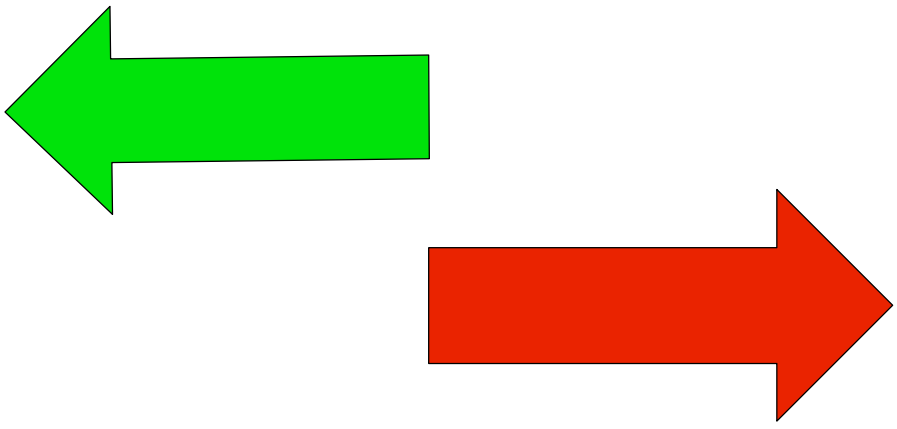


- An entirely new subtype of virus emerges through recombination of human and animal antigens (often swine and avian).
- Associated with a pandemic because the **entire world** population is suddenly susceptible to the new virus.
- They are impossible to predict and can happen anytime.

March 9, 2005 www.ems-solutionsinc.com 47

危機 Out of Danger Comes Opportunity

Drift or Shift?



March 9, 2005 www.ems-solutionsinc.com 48

危機 Out of Danger Comes Opportunity

Course of Influenza in Adults

Day 0	Infected
Day 1 - 4	Incubation (average 2 days)
Day 1 - 6	Contagious (one day before symptoms to 5 days after symptom onset)
Day 2 - 9	Symptomatic (usual 2 - 5 days)
Day 4 to ?	Decreased energy (one week or more)

危機 Out of Danger Comes Opportunity

Three Great Influenza Pandemics in the 20th Century

1. 1918-1919 - Spanish Flu
2. 1957-58 - Asian Influenza
3. 1968 - Hong Kong Influenza

危機 Out of Danger Comes Opportunity

"The (1918 Spanish Influenza) epidemic killed, at very, very conservative estimates 550,000 Americans in ten months; that's more Americans than died in combat in all the wars of this century, and the epidemic killed at least 30 million in the world and infected the majority of the human species. As soon as the dying stopped, the forgetting began."

Alfred W. Crosby
Influenza 1918,
The American Experience

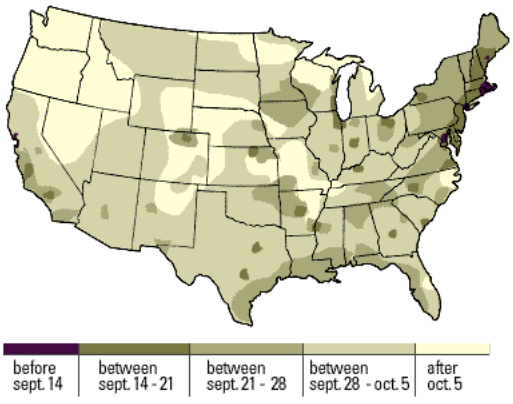
危機 Out of Danger Comes Opportunity

Spanish Flu March 10, 1918

- The virus first manifested on March 10 at Camp Riley, Kansas, after it underwent a genetic "shift".
- With WWI in progress it moved around the globe with ease.
- It affected young people in the prime of their life, often killing them within a day.
  - Average age - 20-25 years old

危機 Out of Danger Comes Opportunity

Approximate beginning of the epidemic, 1918



Source: America's Forgotten Pandemic - The Influenza of 1918 - 1989

危機 Out of Danger Comes Opportunity

Spanish Flu 1918-1919

- The three hardest hit large cities all experienced:
  - City quarantines
  - Required masks while on the street
  - Severe shortage of nurses (up to 75%) and caskets
  - Panic and widespread fear

危機 Out of Danger Comes Opportunity

September- October 1918

- On September 28, 200,000 gather for a Liberty Loan Drive in Philadelphia.
- Days after the parade, 635 new cases of influenza were reported.
- October 6, 289 flu deaths in one day!

March 9, 2005 www.ems-solutionsinc.com 55

危機 Out of Danger Comes Opportunity

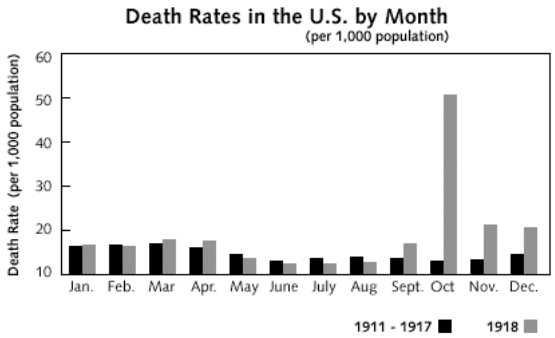
October 1918

- 851 New Yorkers die of influenza in a single day.
- In Philadelphia, the city's death rate for one single week is 700 times higher than normal.
- The crime rate in Chicago drops by 43 percent.
- October 1918 turns out to be the deadliest month in the nation's history as 195,000 Americans fall victim to influenza.

March 9, 2005 www.ems-solutionsinc.com 56

危機 Out of Danger Comes Opportunity

US Deaths Comparing 1917 to 1918



危機 Out of Danger Comes Opportunity

Worldwide Tolls

- Entire Inuit villages in Alaska completely wiped out.
- 20% of the population died in Western Samoa (7,500).
- 1 out of every 20 citizens in Ghana died over 60 days between September 1 and November 1.

危機 Out of Danger Comes Opportunity

The Toll of Spanish Influenza

- 20 to 40 million deaths worldwide (17 million in India alone)
- 500,000 deaths in the US
  - Total death toll in Philadelphia was 150,000
- Scientists still do not know why it was so lethal or why it preferred young people.

March 9, 2005 www.ems-solutionsinc.com 59

危機 Out of Danger Comes Opportunity

Medical Theories For the Cause at the Time

- Nakedness
- Fish contaminated by Germans
- Dirt and dust
- Unclean pajamas
- Old books (stay out of libraries!)
- Open windows
- Closed windows
- Some “cosmic influence”

March 9, 2005 www.ems-solutionsinc.com 60

危機 Out of Danger Comes Opportunity

Asian Influenza - 1957-58

- In May 1957 the World Health Organization (WHO) reported a new H2N2 subtype from Singapore.
- By May 1958 the virus had spread throughout the globe.
- Infection rates were reported to range from 20% to 70%.
  - Case fatality rates were low, ranging from 1 in 2,000 to 1 in 10,000 infections.
  - Death toll 70,000 excess mortality.

危機 Out of Danger Comes Opportunity

Hong Kong Influenza - 1968-69

- In mid July 1968 a new subtype, H3N2 emerged in Hong Kong.
- Mortality rates were similar in magnitude to those caused by Asian influenza.
- Age-specific mortality rates peaked in 1970 and were highest for those over the age of 65 years.
- Serological studies in blood donors suggested that infection rates were in the order of 25% to 30%.
- Death toll 31,00 excess mortality.

危機 Out of Danger Comes Opportunity

Why less deaths in 1957 & 1968?

- Less virulent viruses.
- Antibiotic treatment for secondary infections.
- Improved supportive care.

March 9, 2005 www.ems-solutionsinc.com 63

危機 Out of Danger Comes Opportunity

Recent Scares

March 9, 2005 www.ems-solutionsinc.com 64

危機 Out of Danger Comes Opportunity

Hong Kong 1997

- H5N1- a chicken flu sickened 18 people and killed six.
- First apparent incident of a direct viral leap from avians to humans (usually goes through a intermediary host like a pig).
- The Hong Kong government destroyed 1.6 million chickens.
- Could that have been THE one?

March 9, 2005 www.ems-solutionsinc.com 65

危機 Out of Danger Comes Opportunity

Netherlands March 2003

- A H7N7 virus did another direct leap from birds to humans.
- Spread rapidly to Belgium and Germany, infecting more than 80 people, killing one.
- Brought under control by the slaughter of **30** million poultry in affected countries.
- Was that THE one?

March 9, 2005 www.ems-solutionsinc.com 66

危機 Out of Danger Comes Opportunity

South Korea December 2003

- A H5N1 virus appeared in South Korea spreading rapidly.
- So far, no humans have become infected..
- Immediate call to kill 1.4 million ducks to stop the spread.
- Is this THE one?

March 9, 2005 www.ems-solutionsinc.com 67

危機 Out of Danger Comes Opportunity

January 2004 - January 2005

- Millions of birds with H5N1 have been culled in 14 countries
  - South Korea
  - Thailand
  - Vietnam
  - India
  - Taiwan
  - Japan
  - Cambodia
  - China
  - Madagascar
  - Indonesia
  - Laos
  - Pakistan
  - Myanmar (Burma)
  - Malaysia

March 9, 2005 www.ems-solutionsinc.com 68

危機 Out of Danger Comes Opportunity

Asian Avian Flu

- Has successfully spread to
  - Domestic Cats
  - Tigers in the Bangkok zoo
  - One Case of human-to-human transmission to date (Vietnam, child to mother)

危機 Out of Danger Comes Opportunity

Current Death Toll

- These deaths have occurred in as of March 8, 2005
  - Vietnam 33 deaths
  - Thailand 12 deaths
  - Cambodia 1 death
  - Authorities believe the death toll should be higher as some individuals were not tested and are reporting the deaths as 46 **(at least)**
  - 75% fatality!!!

危機 Out of Danger Comes Opportunity

WHO Concerns - January 23, 2005

The WHO warned on Thu 20 Jan 2005 that the bird flu virus now endemic in Asia appears to be evolving in ways that increasingly favour the start of a deadly human influenza outbreak. It has become "hardier", surviving several days longer in the environment, and evidence also suggested that it is expanding its range of mammal hosts, including captive tigers and experimentally-infected domestic cats.

Peter Cordingley, spokesman for the Western Pacific region

危機 Out of Danger Comes Opportunity

Pandemic Phases

- Phase 0 - Inter-pandemic period. Identification of influenza viruses and development of a vaccine.
  - Preparedness level 0: Inter-pandemic period
  - Preparedness level 1: Initial report of a new strain in humans
  - Preparedness level 2: Novel virus alert – human infection confirmed
  - Preparedness level 3: Human transmission confirmed

危機 Out of Danger Comes Opportunity

Pandemic Phases

- Phase 1 – Confirmation of onset of pandemic, new virus spreads from one person to another, with several outbreaks in at least one country or region. Virus shows severe morbidity and mortality in at least one segment of the population.
- Phase 2 – Regional and multi-regional epidemics. New virus causes outbreaks in multiple countries around the world.
- Phase 3 – End of first pandemic wave. Influenza activity in initially affected country or region has stopped, but outbreaks continue elsewhere.

危機 Out of Danger Comes Opportunity

Pandemic Phases

- Phase 4 – Second or later waves of the pandemic. A second wave of outbreaks of the new virus occurs after 3-9 months within the initial country or region.
- Phase 5 – End of the pandemic, back to Phase 0. Pandemic is officially declared over when infection rate returns to pre-pandemic levels.
  - Based on history, that could take **two years**.

危機 Out of Danger Comes Opportunity

The Clock is Ticking

- Sentinel site surveillance around the world serves as an early warning system.
- WHO has 112 labs in 83 countries looking out for the Big One.
- Influenza pandemics have historically occurred at 25-year intervals.
- Global jet travel and urban overcrowding increase the risk.

March 9, 2005 www.ems-solutionsinc.com 75

危機 Out of Danger Comes Opportunity

"We're due. Its not a matter of if, but **when** this will happen. I am far more afraid of a flu pandemic than I am of SARS."

Albert Osterhaus
WHO Scientist
Wall Street Journal
May 29, 2003

March 9, 2005 www.ems-solutionsinc.com 76

危機 Out of Danger Comes Opportunity

Why Should We Prepare for a Pandemic?

- It **will** happen again. Experts believe another pandemic is inevitable – just don't know when it will happen.
- There will be **very little warning**. Most believe there would be 1-6 months between the time a new Influenza strain in identified before outbreaks would occur in the US.
- Vaccines will **likely not be available for 6 - 12 months** (if at all) from the time the organism is identified and it will likely take two doses, 30 days apart.

危機 Out of Danger Comes Opportunity

Why Should We Prepare for a Pandemic?

- Will likely **occur simultaneously** throughout the US, preventing shifts of resources that normally occur with natural disasters.
- There will be a **prolonged effect on communities**-lasting months, maybe as long as a year.
- United States estimates
  - 89,000-207,000 deaths
  - 314,000-734,00 hospitalized
  - 18 - 42 million doctor visits
  - 20 - 47 million who are ill but do not seek care

CDC Statistics 2002

危機 Out of Danger Comes Opportunity

Why Should We Prepare for a Pandemic?

- Biologics will be in short supply (vaccinations, antibiotics and antivirals)
- Health care workers and first responders will be at high risk for exposure and illness
- Shortage of personnel in important sectors- military, police, fire, utility workers, etc.
- CDC estimates US economic losses may range from $71 to $166 billion.

危機 Out of Danger Comes Opportunity

Why Should We Prepare for a Pandemic?

- WHO has issued the following new estimates for a H5N1 outbreak:
  - The potential death toll of an H5N1 pandemic
    - Low of 2 million
    - High of 100 million if it keeps up its current highly lethal behavior.
  - Four months to circulate the globe.

危機 Out of Danger Comes Opportunity

What should you be planning for?

- Probable average absenteeism of 30% (that includes your vendors and customers too!).
- May have less than six weeks of warning.
- Could have three waves in six month intervals.
  - Each wave could last six weeks to six months.
- No remedy immediately available.

危機 Out of Danger Comes Opportunity

Centers for Disease Control Recommendations

- Surveillance
- Vaccination delivery
- Antiviral delivery
- Emergency response
- Communications
- Command and control management structure in place
- Supplement existing plans now in place for "all hazards."

危機 Out of Danger Comes Opportunity

Imagine if you will…

危機 Out of Danger Comes Opportunity

YOUR Company Town Hall Meeting

- Your firm has 2000 employees and they all attend a town hall meeting of the company.
- **Day One- 30 people come to YOUR company town hall meeting with the very beginning of flu-like symptoms.**
- **Day Two- Those 30 are deathly ill and now we have 100 new people with symptoms.**
- **Day Three- 175 new people with symptoms.**
- **Day Four- 300 new cases.**
- In just four days we could have 600 sick (30% ill) and 90 deaths (15% deaths).

危機 Out of Danger Comes Opportunity

Pandemic Planning

危機 Out of Danger Comes Opportunity

Surveillance At Your Company

- How do you know that anyone is sick?
- How can you begin to detect trends or patterns?
- Initially it may just be anecdotal - pay attention. If the cafeteria is less crowded, the parking lot lighter than usual or security notices less people coming in to work.
- Combine your observations with news.

危機 Out of Danger Comes Opportunity

Assessment

- Check vulnerabilities; look at the pandemic scenario.
- Revisit your BIA
  - Maximum tolerable downtime/recovery time objectives
  - Single-points-of-failure
  - Dependence on vendors
- Failure scenarios -For example, what if you lost your entire call center for two weeks?

危機 Out of Danger Comes Opportunity

Preparedness

- Staff policies regarding flexible work schedules, work-from-home options and stay home if sick.
- Staff cross-training that includes task checklists and good documentation on how to do the job.
- Stockpiling supplies- N-95 masks, nitrile gloves, antiseptic wipes.
- Work from home - do you really have in place what is necessary for people to work from home? Have you tested that theory?

危機 Out of Danger Comes Opportunity

Vaccination Programs

- Offer annual flu shots at your firm.
- Why?
  - Lessens chance of "routine flu" at your place of work.
  - You already have a mechanism and relationships in place.
  - Chance to educate your employees about the flu, epidemics and pandemics and good health practices such as effective hand washing.

March 9, 2005 www.ems-solutionsinc.com 89

危機 Out of Danger Comes Opportunity

Emergency Response

- Once an confirmed outbreak occurs - think about your daily business activities completely differently:
  - Dispense with all unnecessary "face time". Do you need face-to-face meetings or will conference calls or web-casting work? Work cafeterias, on-site gyms and day care should be reconsidered immediately.
  - Hygiene concerns - No shaking hands. Use your own phone when possible. Distribute antiseptic wipes.
  - Develop and enact worker quarantine as necessary. Staff who are ill and have symptoms need to stay home!
  - Have janitorial clean all phones and hard surfaces with approved disinfectant nightly (1 part bleach to 9 parts water).

March 9, 2005 www.ems-solutionsinc.com 90

危機 Out of Danger Comes Opportunity

Emergency Response

- Reorganize your work and workforce immediately.
  - Can you split up mission critical activities to minimize potential downtime? For example if work is normally done by 20 people split them up into two or three groups to prevent cross contamination. If possible split across different locations too.
- Immediately offer mental health assistance- EAP programs.
- Once a pandemic has been announced, determine how you might treat a person who gets suddenly seriously ill at work. Isolate and mask till transported? Clean their area? Who and how?
- Have a supply of N-95 face masks and nitrile gloves on-site.

危機 Out of Danger Comes Opportunity

Communications

- This is the essential key to the plan. You cannot communicate too much.
  - 800 employee number
  - Your company intra-net and internet site
  - Email - sharing health information; the company response plan; what you are doing; policies regarding pay, time off, benefits, etc.
  - Daily broadcast voicemails using a notification system (great for keeping people that are home informed). Have the CEO record them.
  - Remember **all** of your stakeholders: employees, vendors, customers, investors, government (DPH, EMS, County EOC)

危機 Out of Danger Comes Opportunity

Incident or Crisis Mgmt Involvement

- Develop plans now.
- Determine a methodology for monitoring health information.
- At the first sign of a potential problem, convene the group, assemble the facts, review the plan, determine a course of action.
- Determine if the EOC must be convened or will be virtual.
- Determine the frequency of meetings (at least twice daily) and modify plan accordingly.

危機 Out of Danger Comes Opportunity

Training and Exercises

- Train your Incident or Crisis Management team and employees now!
- Meet with your local Emergency Management System (EMS) and Department of Public Health (DPH) to learn their plans and make a connection.
- Develop a tabletop exercise with a pandemic narrative to work through your plan and policies and then revise.

危機 Out of Danger Comes Opportunity

Your Homework Assignment

危機 Out of Danger Comes Opportunity

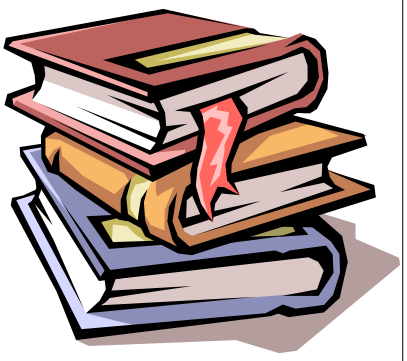
Find Out What Your State And City Has Done to Get Ready

- Does your state have a pandemic plan?
- What are your state's quarantine laws?
- Does your state statues provide for mandatory vaccination during an infectious disease emergency?
- What laws and procedures are in place for closing schools and suspending public meetings?

危機 Out of Danger Comes Opportunity

Do A Little Spring Reading…

- The Great Influenza: The Epic Story of the Deadliest Plague In History, John Barry 2004
- The Coming Plague, Laurie Garrett
- Influenza 1918- The Worse Epidemic in American History, Lynette Iezzoni
- Epidemic and Peace, Alfred Crosby
- Man And Microbes: Disease and Plagues in History and Modern Times, Arno Karlen
- Viruses, Plagues, and History, Michael B. A. Oldstone
- Flu, Gina Kolata
- Plagues and Peoples, William H. McNeill
- Influenza 1918: The American Experience, Andrea Kalin VHS



March 9, 2005 www.ems-solutionsinc.com 97

危機 Out of Danger Comes Opportunity

WHO New Publication

- **WHO checklist for influenza pandemic preparedness planning**
  http://www.who.int/csr/resources/publications/influenza/WHO_CDS_CSR_GIP_2005_4/en/

March 9, 2005 www.ems-solutionsinc.com 98

危機 Out of Danger Comes Opportunity

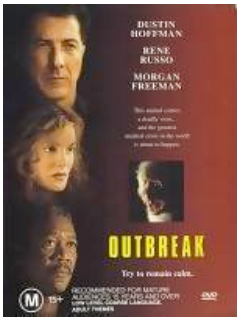
And A Little Web Surfing

- ProMED-mail (wonderful list serve!) http://www.promedmail.org
- International Society for Infectious Diseases http://www.isid.org
- FluAid2.0 www.cdc.gov/od/nvpo/pandemics/
- Pandemic Influenza http://www.cdc.gov/od/nvpo/pandemics/
- Preparing for Pandemics http://www.google.com/search?q=pandemics&hl=en&lr=&ie=UTF-8&start=20&sa=N

March 9, 2005 www.ems-solutionsinc.com 99

危機 Out of Danger Comes Opportunity

See a Movie?



Outbreak 1995

DUSTIN HOFFMAN plays Sam Daniels, a take-charge army virologist trying to stave off global biological meltdown. A rare killer virus from the jungles of Zaire has taken hold in a California community. It knows no boundaries. Its mortality rate is 100%. And some say the only way to stop its spread is to firebomb threw town and everyone in it. RENE RUSSO, MORGAN FREEMAN, DONALD SUTHERLAND and more superb talents join Hoffman in this shocking, nail-biting tale of the day that could become doomsday.

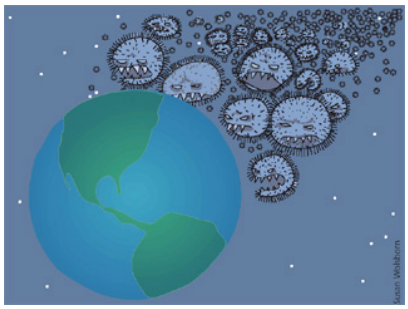
.

March 9, 2005 www.ems-solutionsinc.com 100

危機 Out of Danger Comes Opportunity

And Lastly…

- Take this seriously.
- Do your homework!
- Develop an infectious disease plan for your company.
- Get ready now!



The virus is getting ready to **shift**!

危機 Out of Danger Comes Opportunity

Thank You!

Regina Phelps CEM RN BSN MPA
Emergency Management & Safety Solutions
San Francisco, California 415-643-4300
www.ReginaPhelps.com
www.ems-solutionsinc.com